IBM-POUGHKEEPSIE
December 31, 1964

Diagnostic Engineering Publications

1410/7010

Subject: Diagnostic Program C022D **1410 Alarm Program**

Sequence Number 025
Replaces C022C

1. Card 001 is a STANDARD SYSTEM CONTROL CARD.
   Card 002 is a STANDARD CHANNEL 1 CONTROL CARD.
   Card 003 is a STANDARD CHANNEL 2 CONTROL CARD.

2. C022D is a slightly modified version of C022C. The routine on page 37 (pglin 1534-1555, addresses 03737 to 03857 "CHECK ADDRESS CHECK ALARM CIRCUITRY BY GENERATING AN ADDRESS WRAP AROUND LOW") must be bypassed on systems with 100K memory.

Enclosures:
75 Pages
Card Deck for CARD ONLY SYSTEMS (as punched by UP51)
8 Cards - Card Loader (1-7) and 1 Core Clear
168 Cards No. 001 - 168 Data Cards
1 Card Execute Card

Distribution:
X 1410
7010
Other

083

C022D

1410 ALARM PROGRAM

12/31/6

CONTENTS OF C022 WRITEUP AND LISTING

2.00.00.0 TEST DESCRIPTION

00.1 MODIFICATIONS

See Release Sheet

00.2 DESCRIPTION

This program is designed to test:

1. All circuitry used to detect machine and program errors that result in SYSTEM CHECKS. (In this writeup and program, the words "SYSTEM CHECKS" and "ALARMS" are synonymous.)

2. All circuitry used to cause a MASTER ERROR as a result of a SYSTEM CHECK

3. All MASTER ERROR circuitry that is used, or required, to properly cause an error stop, error restart and error reset - restart as determined by the CHECK CONTROL switch setting.

This program checks all circuits in the above categories except those listed in Appendix I of this writeup.

This program assumes that the current CPU error detection or reliability program has been successfully run with no alarms occurring.

This program is made in two sections. Under normal operation, only the first, or "automatic", section is run. If TAD4 is set to a one, the second, or "manual", section will also be run.

AUTOMATIC SECTION. This section includes the majority of the program. It checks all the alarm circuitry that can be checked by program means with the check control switch in normal, restart and reset-restart modes. The word "automatic" is probably a misnomer since several manual interventions are required to change switch settings. Also, although the majority of the possible errors in this section will be detected

by program means, some require visual observation by the operator as indicated by program typeouts.

The first routine of the program operates in normal mode, and requires the operator to perform checks using the "CHECK TEST" switches. Error indications are entirely visual.

The next routine operates in restart mode. Its errors will be detected by program means, unless an "alarm" stop occurrs.

The majority of the automatic section then operates in reset-restart mode. All errors are detected by program means except for the possibility of an "alarm" stop.

Five routines (six routines if you have a 1405) will then operate in normal mode. Error indications are completely visual for these routines.

Unless TAD4 is set to one, the program will normally end here.

MANUAL SECTION. This section is termed "Manual" because each of the eight routines included require the operator to ground a pin on the backpanel of the CPU. As stated earlier, this section will be run only if requested by setting TAD4 to a one. Since this section checks only circuit inputs, and no transistors, it should be necessary to run it only on a new system, or after an engineering change has been completed. See Appendix I for specific circuitry checked by the manual section. (The manual section should also be run upon initial receipt of this program.) Because of the grounding of backpanel pins, the routines in the manual section will not necessarily check the settings of the standard TADS. You will have to refer to each individual routine listing to see how they handle looping, error halts, etc.

00. 3 EQUIPMENT REQUIRED

1410 or 1410 ACC CPU, Console Printer, any size memory.

Other equipment used only if it is attached to your system:
- 1311 IMPAC with SEEK OVERLAP and SCAN features. (Program performs only SEEK and SCAN operations. It will not WRITE)
- 1405 FILE (Program will write on the C. E. tracks only.)

00. 4 CARD DECK

7 Cards .... Load Program
1 Card .... Core Clear Card
167 Cards .... Program
  (Cards numbered 001 - 167)
  Card numbered 004 contains all TADS
  Card numbered 001 is STANDARD SYSTEM CONTROL CARD
  Card numbered 002 is STANDARD CHANNEL 1 CONTROL CARD
  Card numbered 003 is STANDARD CHANNEL 2 CONTROL CARD
1 Card................. Execute Card (Branch to 2000)

00. 5 MACHINE E.C. LEVEL

251818

00. 6 PASS LENGTH

2.5 Minutes - Auto Section Only (Normal Pass)

6.5 Minutes - Auto and Manual Sections

The actual machine running time is very short. The above times represent the average times required to run the program with all manual interventions included.

2.00 .01.0 LOADING PROCEDURES

1. Display memory location 00000.

2. Alter to —

ŘĽ%1100011$.̌	For channel 1 reader
X̌Ľ⌑1100011$.̌	For channel 2 reader
ŘĽ%B000011$.̌	For channel 1 tape*
X̌Ľ⌑B000011$.̌	For channel 2 tape*

3. Set to RUN, RESET, START.

*Note: This procedure will load the current diagnostic tape control program. To select a specific diagnostic from tape, refer to the control program's writeup.

2.00 .02.0 OPERATING PROCEDURES

Load Program.

Program will normally type its identity followed by specific instructions to the operator. At its completion, it will return to the load program.

Normal program operation may be altered at any time by using the "Inquiry Request Key" and the "Program Alter Routine" to set one, or several, of the following TADS to "1".

TAD	ADDRESS	IF NOT 1 (NORMAL)	IF SET TO ONE
0	01000	Normal Typeouts	Bypass typeouts for scoping. (Typeouts giving directions to the operator will not be bypassed.)

TAD	ADDRESS	IF NOT 1 (NORMAL)	IF SET TO ONE
1	01001	No Loops	Loop present routine.
2	01002	No Error Halts	Halt on error.
3	01003	Single Program Pass	Repeat program.
4	01004	Run Auto Section Only	Run entire program.
5	01005	No Effect	Repeat the RESET-RESTART MODE routines in the Auto Section.

2.00.03.0 OPERATING HINTS AND COMMENTS

Most of the 1410 CPU incorporates "Fail Safe" circuitry. However, in order for this fail safe circuitry to be effective, the "System Check" or "Alarm" circuitry must be capable of detecting circuit and program errors. Much of the alarm circuitry is not "fail safe". This program is meant to fill this gap. After successful completion of this program, you should be able to assume that your alarm circuitry will detect all errors that it is designed to detect. (Exception - Failures of those circuits listed in Appendix I.)

There is a HALT in the program listing for every conceivable alarm circuit failure. (This includes the errors that must be detected by visual means.) Directly following each of these halts in the listing is a brief statement indicating the probable reason for the failure. Most of these halts will also have a logic page and scope point listed after the error statement.

These error statements and scope points will be accurate only if all previous routines have been successfully run. The first error indication in the program should always be the most accurate.

When it is desired to loop a routine for scoping, and error typeouts are not desired, setting TADS 0 &1 to a 1, and TAD2 to $\bar{1}$, by use of the Program Alter Routine, will result in a tighter loop than if only TAD 1 is a one.

When running the manual section of the program, the standard TADS will not necessarily have any effect on the program operation. For these eight routines, it will be necessary to refer to each routine listing in order to determine how to scope loop, etc.

2.00 . 04.0 PROGRAM STOPS AND RESTARTS

04.1 PROGRAM STOPS

There are several program stops to allow the operator to change switch settings, visually check for errors, etc. In all such cases, the halt will be preceded by a typeout of directions to the operator. (See Section 2.XX.05.1 for typeout explanations.)

Every program detected error will cause an error halt to occur if TAD 2 is a one. These halts are provided for every program detectable error. Refer to the IAR address in the listing for an explanation of a specific error.

04.2 PROGRAM RESTARTS

02000	Program may be restarted from the beginning at any time by starting at address 2000.
00030	You may restart the program, at the beginning of the last routine run, by starting at address 30 at any time.
FIRST ADDRESS OF ANY ROUTINE	You may restart the program at the first address of any routine at any time.

You MAY NOT restart the program by a RESET-START action except upon completion of the program. Address 00001 is necessarily used by the program for automatic reset-restarts.

2.00.05.0 TYPEOUTS (See Appendix II for examples of actual program typeouts.)

05.1 NON ERROR TYPEOUTS

C022C

Program identification typed at program beginning.

CONTROL CARD INFO IS MISSING

You should never receive this typeout. It is an indication that the operator did not enter system and channel control card information.

PRINT CTRL TO NRML

Place the PRINT OUT CONTROL switch in the NORMAL position and start.

CHK CTRL TO NRML

Place the CHECK CONTROL switch in the STOP NORMAL position and start.

```
CHK TST SW CHK:
     1. COMP RESET, PRESS A CHK TST SW, START
     2. CHECK FOR:
        STOP WITH ALL PROCESS ALARMS ON
        TYPEOUT:
             SW.1-E ‡‡‡‡‡S
             SW.2-E BLANK
             SW.3-E 00002
     3. IF WRONG-ERR XXXXX
     4. REPEAT 1-3 FOR 3 CHK TESTS
FOR NEXT CHK-RESET, START, START
```

This series of typeouts is provided by the first routine of the program. At the completion of the typeouts, depress (and hold in) check test switch 1. Computer reset, and press start. All process alarm indicators should come on. The typeout should be as illustrated for "SW. 1". (Plus AAR, BAR, etc.)

The same actions should be taken for check test switches 2 and 3. (Switch 2 IAR typeout should be bbbbb unless you have a 10K machine. In this case, it should be 0bbbb.)

If all process alarm indicators are not on for each switch or if the typeout is incorrect, refer to the error halt address indicated above by XXXXX.

To continue the program, COMPUTER RESET, and depress START twice.

INHIBIT PRINTOUT

Place the PRINTOUT CONTROL switch to the INHIBIT position and start.

CHK CTRL TO RSTRT

Place the CHECK CONTROL switch in the RESTART position and start.

IF THIS MODE ERR STOPS-ERR XXXXX

This typeout is provided after placing the CHECK CONTROL switch in the RESTART or RESET-RESTART position. If, while the switch is so positioned, the machine should stop due to a SYSTEM CHECK, refer to the error halt at the address indicated above by XXXXX.

CHK CTRL TO RST-RSTRT

Place the CHECK CONTROL switch in the RESET-RESTART position and start.

1405 C.E. TST & 1405 CMP DISABLE TO ON

This typeout will occur only if your channel control cards indicate you have a 1405 attached to your system. Place the C.E. TEST and the UNEQUAL COMPARE INOP switches to on. Also, the low order 1405 module for each channel should be made ready.

1405 SWITCHES TO NORMAL

This typeout will occur at the end of the program if the program has requested 1405 switch changes. Restore 1405 switches to normal.

---------- ALARM:
OFF-ERR XXXXX
ON-OK, COMP RESET, START

When this typeout occurs, the alarm indicated by the ---'s should be on. If it is not, refer to the error halt in the listing at the address indicated by the XXX's. To continue the program, computer reset and start.

---------- ALARM:
NOT ON ALONE-ERR XXXXX
ON ALONE-OK, RESET, START

When this typeout occurs, the alarm indicated by the ---'s should be on, and only that alarm should be on. If it is not on, or if other alarms are on in addition, refer to the error halt in the listing indicated above by the XXX's.

END C022 AUTO

This typeout indicates the end of a normal pass of C022.

GRND 11D2D22K&START

Manual section typeout. Ground the indicated backpanel point and depress START.

UNGRND&START

Manual section typeout. Remove the ground wire and depress start.

1. GRND 11D2C09B&START
2. ----------ALARM:
   NOT ON ALONE-ERR XXXXX
   ON ALONE-OK, UNGRND, RESET, START

Manual section typeout. Ground the indicated backpanel point and depress START. The alarm indicated above by ---'s should come on (and no other alarms should come on). To continue the program, remove the ground wire, computer reset and start.

If "1." does not specifically say START, the indicated alarm should come on as soon as the ground wire is attached.

1. GRND 11D2B24C&START
2. SHUD STOP ON ----------ALARM
3. IF NOT-ERR XXXXX
4. IF OK-UNGRND, RESET, START

Manual section typeout. Ground the indicated backpanel point and depress START. Check to see that the alarm indicated by the ---'s comes on and that the computer stops. To continue the program, remove the ground wire, computer reset and start.

END C022

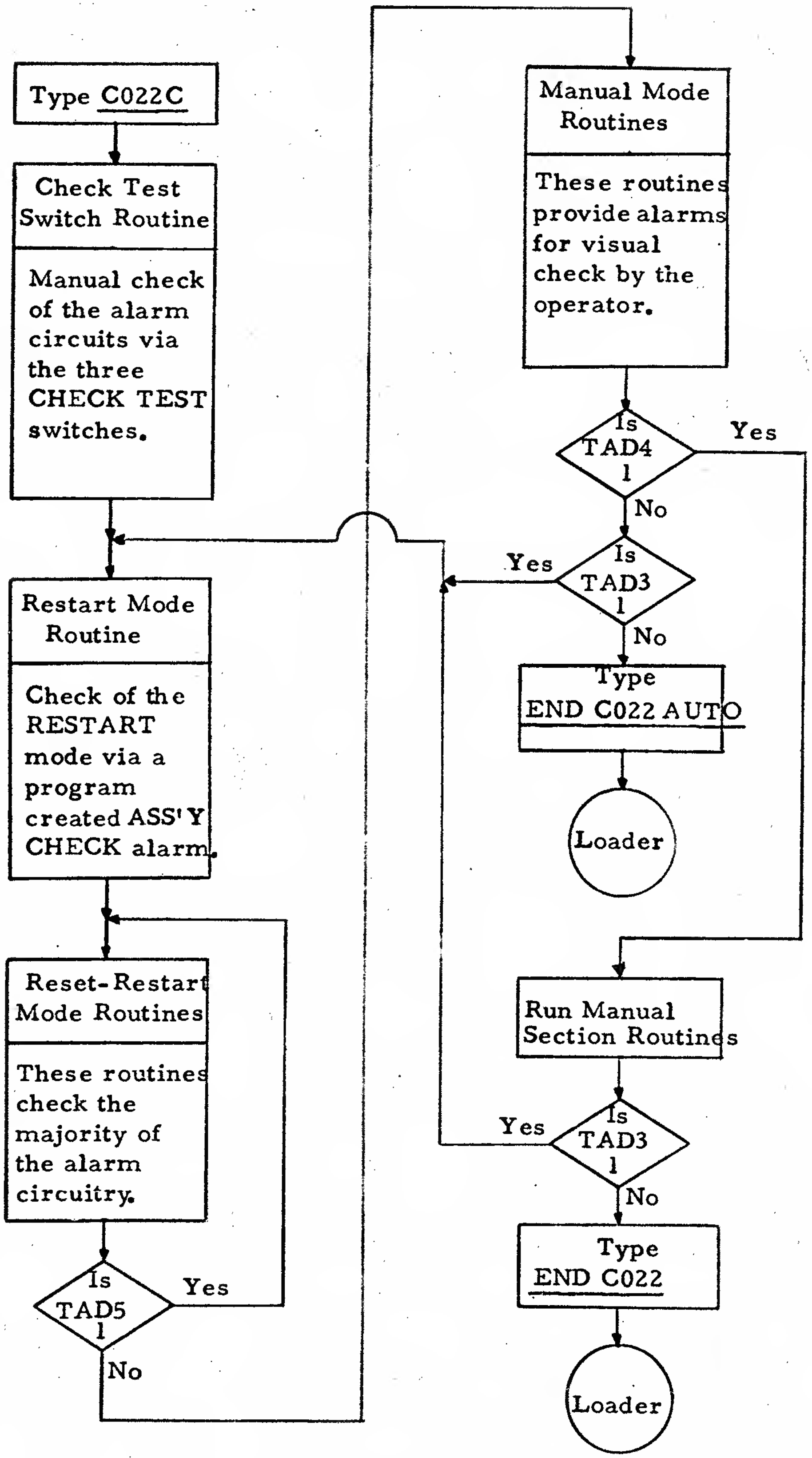
Typed at the completion of a complete pass of the program.

05.2 ERROR TYPEOUTS

ERR XXXXX

This typeout is an indication that a program detected error occurred. Refer to the error halt address in the listing (indicated above by XXXXX) for specific error information.

2.00.06.0 GENERAL PROGRAM FLOW CHART



2.00..07.0 APPENDIX I

07.1 ALARM CIRCUIT INPUTS CHECKED ONLY BY THE MANUAL SECTION OF PROGRAM.

LOGIC 18.14.08

Circuit 4F	Input H	A channel V.C.
Circuit 4G	Input A	A Reg Set Error
Circuit 4H	Input Q	Address Exit Error
Circuit 4I	Input H	A Char Select Error
Circuit 4G	Input B	B Reg Set Error
Circuit 4I	Input G	Op Mod Reg Set Error
Circuit 4H	Input P	B Char Sel Error

LOGIC 18.14.01

Circuit 3D	Input E	A Char Sel Error
Circuit 3E	Input R	A Char Sel Error
Circuit 3B	Input D	A Char Sel Error
Circuit 3C	Input R	A Char Sel Error

07.2 CAUTION - THE FOLLOWING ALARM CIRCUITRY IS NOT CHECKED BY THIS PROGRAM.

It would be impractical for a diagnostic program to be of any assistance in checking the following groups of circuits:

LOGIC 12.12.46

All circuits meant to detect multiple cycle control latches being on at the same time. (The circuits on this logic page that are meant to detect the lack of any cycle control latch being on are checked in the auto section of the program.)

LOGIC 18.14.01

Circuit Inputs 3B-E, 3C-G, 3D-D and 3E-G.

These four circuit inputs are used to detect multiple A Character Selections. Specifically, they are meant to check for OP MOD - F2 multiple selections and E2 - F2 multiple selections.

LOGIC 12.12.43

Circuits 1D, 1E, 2E, 2F, 3F.

Circuit Input 1G-G.

These circuits are for the purpose of detecting a NO LAST LOGIC GATE condition, and causing an INSTRUCTION CHECK as a result.

2. .07.3 APPENDIX II - AUTO SECTION TYPEOUTS

```
R C022A
R  PRINT CTRL TO NRML
R  CHK CTRL TO NRML

S 01789 01788 01188 .V D̆D̆D̆ T0bb
R  CHK TST SW CHK:
R   1.COMP RESET,PRESS A CHK TST SW,START
R   2.CHECK FOR:
R     STOP WITH ALL PROCESS ALARMS ON
R     TYPEOUT:
R       SW.1-E ‡‡‡‡S
R              -----
R       SW.2-E BLANK
R       SW.3-E 00002
R   3.IF WRONG-ERR 02579
R   4.REPEAT 1-3 FOR 3 CHK TESTS
R  FOR NEXT CHK-RESET,START,START

S 02579 02580 02579 .Δ .̆.̆b T0bb

E ‡‡‡‡S ‡SVY‡ ‡SVXZ Jb J̆J̆J̆ bbbb

E bbbbb 02580 02579 bb bb  bbbb


E 00002 02580 02579 Jb J̆J̆J̆ bbbb


S 02579 02580 02579 .Δ .̆.̆b bbbb
R  INHIBIT PRINTOUT
R  CHK CTRL TO RSTRT

S 02714 02713 01188 .V ;̆;̆;̆ T0bb
R  IF THIS MODE ERR STOPS-ERR 02853
R  CHK CTRL TO RST-RSTRT
R  1405 C.E.TST & 1405 CMP DISABLE TO ON
R  IF THIS MODE ERR STOPS-ERR 02997
R  CHK CTRL TO NRML
R  IO INTRLK ALARM:
R   OFF-ERR 06392
R   ON-OK,COMP RESET,START

R  ADDRESS CHK ALARM:
R   OFF-ERR 06508
R   ON-OK,COMP RESET,START

R  RBC INTRLK ALARM:
R   OFF-ERR 06784
R   ON-OK,COMP RESET,START

R  INSTRUCT CHK ALARM:
R   NOT ON ALONE-ERR 06953
R   ON ALONE-OK,RESET,START

R  OP REG SET ALARM:
R   NOT ON ALONE-ERR 07095
R   ON ALONE-OK,RESET,START

R  1405 SWITCHES TO NORMAL
R END C022 AUTO
```

```
R   CHK CTRL TO RST-RSTRT
R   GRND 11D2D22K&START
R   UNGRND&START
R   CHK CTRL TO NRML
R   1.GRND 11D2D26D&START
R   2.A REG SET ALARM:
R     NOT ON ALONE-ERR 07607
R     ON ALONE-OK,UNGRND,RESET,START

R   1.GRND 11D2C09B&START
R   2.ADDR EXIT ALARM:
R     NOT ON ALONE-ERR 07762
R     ON ALONE-OK,UNGRND,RESET,START

R   1.GRND 11D2C07D&START
R   2.A CHAR SEL ALARM:
R     NOT ON ALONE-ERR 07913
R     ON ALONE-OK,UNGRND,RESET,START

R   1.GRND 11D2C04P
R   2.A CHAR SEL ALARM:
R     NOT ON ALONE-ERR 08056
R     ON ALONE-OK,UNGRND,RESET,START

R   1.GRND 11D2B23P&START
R   2.B REG SET ALARM:
R     NOT ON ALONE-ERR 08214
R     ON ALONE-OK,UNGRND,RESET,START

R   1.GRND 11D2B24C&START
R   2.SHUD STOP ON OP MOD SET ALARM
R   3.IF NOT-ERR 08408
R   4.IF OK-UNGRND,RESET,START

R   1.GRND 11C3H22B&START
R   2.SHUD STOP ON B CHAR SEL ALARM
R   3.IF NOT-ERR 08601
R   4.IF OK-UNGRND,RESET,START

R   1435 SWITCHES TO NORMAL
R END C022
```

```
PGLIN      LABEL       OPCOD  OPERAND                                                     CT  ADDRS  INSTRUCTION

1002       *    *************************************************
1003       *    *          PROGRAM STARTS AT ADDRESS 2000          *
1004       *    *************************************************
1005                   CTL    2
1006       LOAD        EQU    400
1007       TOPMEM      EQU    9899           9691-9999 FOR 1405 WRITE
1008       WRTBCT      EQU    9691
1009       ****************************************************************
1010       *$STANDARD TADS.
1011                   ORG    1000   ****NOT ONE****    ******ONE******              01000
1012       TAD0        DC     @ @    TYPED OUTPUTS      BYPASS TYPING              1  01000
1013       TAD1        DC     @ @    NO LOOPS           LOOP ROUTINE               1  01001
1014       TAD2        DC     @ @    NO ERROR HALTS     HALT ON ERROR              1  01002
1015       TAD3        DC     @ @    ONE PROG. PASS     REPEAT PROGRAM             1  01003
1016       *$SPECIAL TADS.
1017       TAD4        DC     @ @    AUTO SECT ONLY     ENTIRE PROGRAM             1  01004
1018       TAD5        DC     @ @    NO EFFECT          REPEAT RESET-              1  01005
1019       *                                            RESTART MODE
1020       *                                            ROUTINES IN THE
1021       *                                            AUTO SECTION.
                               G
1022                   DCW    @M@                                                1  01006
1023                   ORG    1010                                                  01010
1024       ****************************************************************
1025       *$CHECK TADS 0,1 AND 2 CLOSED SUBROUTINE.
1026       CKTAD       SBR    EXIT&5                                             7  01010  G 01117 B
1027       CKTADA      MLCS   @A@,COMTAD     SET TAD0 INDICATOR                 12  01017  D 09292 01119 3
1028                   BCE    *&13,TAD0,1    GO IF TAD0 IS A ONE                12  01029  B 01053 01000 1
1029                   MLCS   @ @,COMTAD     CLEAR TAD0 INDICATOR               12  01041  D 09293 01119 3
1030                   MLNS   @1@,COMTAD     SET TAD1 INDICATOR                 12  01053  D 09294 01119 1
1031                   BCE    *&13,TAD1,1    GO IF TAD1 IS A ONE                12  01065  B 01089 01001 1
1032                   MLNS   @ @,COMTAD     CLEAR TAD1 INDICATOR               12  01077  D 09293 01119 1
1033                   BCE    *&12,TAD2,1    GO IF TAD 2 IS A ONE               12  01089  B 01112 01002 1
1034                   A      @2@,COMTAD     SET TAD2 INDICATOR                 11  01101  A 09295 01119
1035       EXIT        B      0              RETURN TO PROGRAM                   7  01112  J 00000
1036       COMTAD      DCW    @ @            C IF TAD0&1-1,TAD2 NOT 1            1  01119
```

```
                        1410 ALARM PROGRAM
PGLIN    LABEL          OPCOD  OPERAND                                           CT  ADDRS  INSTRUCTION

1038     ***********************************************************************
1039     *$STANDARD TYPE ROUTINE 2 WITH DELAY ADDED.
1040     TYP1           SBR    TYP2&8       STORE MESSAGE ADDRESS                  7  01120  G 01135 B
1041     TYP2           WCP    0            TYPE MESSAGE                          10  01127  M %TO 00000 W
1042                    SBR    TYP3&5       SET RETURN ADDRESS                     7  01137  G 01186 B
1043                    BCB1   *-23         BRANCH BUSY                            7  01144  R 01127 2
                                                                                                      G
1044                    BA1    *&1          BRANCH ANY                             7  01151  R 01158 M
1045                    MLCWA  &2400,@22222@                                      12  01158  D 09299 09303 X
1046                    S      &1,@22222@   DELAY FOR CARRIAGE                    11  01170  S 09304 09303
1047     TYP3           BZ     0            RETURN BEFORE ALARM                    7  01181  J 00000 V
1048                    B      *-24         CAUSES RESET-RESTART                   7  01188  J 01170
1049                    NOP                                                        1  01195  N
1050     ***********************************************************************
1051     *$CONTROL INDICATORS.
1052                    ORG    01242                                                  01242
1053                    DCW    @X*0@              NOT APPLICABLE TO 7010           3  01244
1054                    DC     @025@              SEQUENCE NUMBER IS 025           3  01247
1055                    DC     @.9@               LAST 1000S IS 09,SYS1,CHN1,CHN2  2  01249
1056     ***********************************************************************
1057     *$PROGRAM IDENTIFICATION.
1058     IDENT  D       DCW    @C022D@,G          PROGRAM IDENTITY                 5  01254
```

```
PGLIN     LABEL     OPCOD  OPERAND                                                        CT  ADDRS  INSTRUCTION

1060      *******************************************************************
1061      *$STANDARD SYSTEM CONTROL CARD.
1062                ORG     1256      CHARACTER & PURPOSE         COL                        01256
1063      SYS1      DC      a a  ALPHA 0.1.X - 1410.1410ACC.7010 13                        1  01256
1064              &1 DC     a a  0.1.3.5.7.9-10.20.40.60.80.100K 14                        1  01257
1065              &2 DC     a a                    SPARE         15                        1  01258
1066              &3 DC     a a  1.2-CHNL1 100.132 CHAR PRINTER  16                        1  01259
1067              &4 DC     a a  1.2-CHNL2 100.132 CHAR PRINTER  17                        1  01260
1068              &6 DC     a  a                   S ARES      18-19                       2  01262
1069              &7 DC     a a  1 - OVERLAP                     20                        1  01263
1070              &8 DC     a a  1 - PRIORITY ALERT              21                        1  01264
1071             &11 DC     a   a                  SPARES      22-24                       3  01267
1072             &12 DC     a a  1 - CHANNEL ONE PRESENT         25                        1  01268
1073             &13 DC     a a  1 - CHANNEL TWO PRESENT         26                        1  01269
1074             &19 DC     a      a               SPARES      27-32                       6  01275
1075             &20 DC     a a  1 - REAL TIME CLOCK             33                        1  01276
1076             &32 DC     a            a         SPARES      34-45                      12  01288
```

```
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                        1410 ALARM PROGRAM
PGLIN      LABEL        OPCODE  OPERAND                                    CT  ADDRS  INSTRUCTION

1201      ****************************************************************
1202      *$CLOSED SUBROUTINE TO PLACE AN INVALID CHARACTER IN LOCATION 00110
1203      *$OF CORE MEMORY.                                                 7  01808  G 01875 B
1204      CLINVD        SBR     CLINVA&5        SET RETURN ADDRESS          6  01815  ¤ 01835
1205                    CW      CLINVB&1                                    7  01821  G 00020 A
1206                    SAR     20                                          6  01828  / 00120
1207                    CS      120             ATTEMPT TO CLEAR LAST ONE   6  01834  ¤ 01871
1208      CLINVB        CW      CLINVA&1                                    7  01840  G 00020 A
1209                    SAR     20                                         12  01847  0 09310 00112 X
1210                    MLCWA   @$.50@,112      STORE EDIT B FIELD         11  01859  E 09220 00112
1211                    MCE     XEDITA,112    ***GENERATE INVALID BLANK
1212      *                                        IN ADDRESS 0110          7  01870  J 00000
1213      CLINVA        B       0
1214      ****************************************************************
1215      *$CLOSED SUBROUTINE TO CLEAR INVALID CHARACTER AT LOCATION ON 00110
1216      CLEARC        SBR     CLEARA&5        SET RETURN ADDRESS          7  01877  G 01908 B
1217                    CW      CLEARA&1                                    6  01884  ¤ 01904
1218                    SAR     20                                          7  01890  G 00020 A
1219                    CS      120                                         6  01897  / 00120
1220      CLEARA        B       0                                           7  01903  J 00000
1221      EUROPE    C   B       CKTAD               GO INTERROGATE TADS 0&1&2     7  01910  J 01010
1222                C   BBE     *&8,SYS1&5,1        BRANCH IF EUROPEAN EDIT      12  01917  W 01936 01261 1
1223                C   B       *&13                                            7  01929  J 01948
1224                C   MLCA    PATCH,@$.50@        CHANGE . TO ,              12  01936  0 01957 09310 T
1225                C   B       START&19                                        7  01948  J 02019
1226      PATCH     C   DCW     @,50@                                           3  01957
1227                    ORG     2000                                               02000
                                                                                                        D
1228      START         MRCWG   XROUTN,30       SET TO RSTRT RTNS AT 30    12  02000  0 09184 00030 L
1229                C   B       EUROPE                                      7  02012  J 01910
                                                                                                 G
1230                    BA1     *&1                                         7  02019  R 02026 M
1231                    MLCWS   @00000@,X1      SET X1 FOR ROUTINE USE     12  02026  0 09315 00029 7
1232                    WCP     IDENT           TYPE PROGRAM IDENTITY      10  02038  M %T0 01250 W
                                                                                                 G
1233                    BA1     *-16                                        7  02048  R 02038 M
1234                    CS      TOPMEM          SET UP IN CASE OF 1405      6  02055  / 09899
1235                    CS                                                  1  02061  /
                             G
1236                    MLCWS   @M@,TOPMEM&1    GM-WM TO 09900             12  02062  D 09316 09900 7
```

```
PGLIN   LABEL     OPCOD  OPERAND                                                CT  ADDRS  INSTRUCTION

1238    *****************************************************************
1239    *$ENSURE THAT CONTROL CARD INFO IS PRESENT.                                                    G
                                            G                                   12  02074  W 02128 01257 M
1240    CARDOK    BBE    NDCARD&6.SYS1&1.M  IS CTRL INFO PRESENT
1241              B      TYP1               NO                                   7  02086  J 01120
1242              DCW    @CONTROL CARD INFO IS MISSING@.G                       28  02120
1243    NOCARD    H      CARDOK                                                  6  02122  . 02074
1244    *****************************************************************
1245    *$CHECK TEST SWITCHES ROUTINE.                                                                 D
1246              MRCWG  XNRML,1                                                12  02128  D 09284 00001 L
1247              BNQ    ITR1                                                    7  02140  J 08719 Q
1248              B      TYP1                                                    7  02147  J 01120
1249              DCW    @ PRINT CTRL TO NRML@.G                                19  02172
1250              B      NORMAL          GO TO CLOSED SUBROUTINES                7  02174  J 01732
1251              CW     NRMLAA&1                                                6  02181  ¤ 02562
1252              SAR    6                                                       7  02187  G 00006 A
1253              B      TYP1                                                    7  02194  J 01120
1254              DCW    @ CHK TST SW CHK.@.G                                   16  02216
1255              B      TYP1                                                    7  02218  J 01120
1256              DCW    @  1.COMP RESET.PRESS A CHK TST SW.@                   34  02258
1257              DC     @START@.G                                               5  02263
1258              B      TYP1                                                    7  02265  J 01120
1259              DCW    @  2.CHECK FOR.@.G                                     14  02285
1260              B      TYP1                                                    7  02287  J 01120
1261              DCW    @     STOP WITH ALL PROCESS ALARMS ON@.G               35  02328
1262              B      TYP1                                                    7  02330  J 01120
1263              DCW    @     TYPEOUT.@.G                                      12  02348
1264              B      TYP1                                                    7  02350  J 01120
1265              DCW    @       SW.1-E ****S@.G                                18  02374
1266              B      TYP1                                                    7  02376  J 01120
1267              DCW    @                -----@.G                              18  02400
1268              B      TYP1                                                    7  02402  J 01120
1269              DCW    @       SW.2-E BLANK@.G                                18  02426
```

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PGLIN     LABEL     OPCOD  OPERAND                                            CT  ADDRS  INSTRUCTION

1142                ORG    1403                                                   01403
1143      ****************************************************************
1144      *$CLCSEC SUBROUTINE TO SET UP FOR RESET-RESTART TYPE OF ROUTINE.
1145      SETUPA    SBR    SETGC&5      SET RETURN ADDRESS                     7  01403  G 01467 B
                                                                                                      0
1146                MRCWG  XSTRTA,1     STORE ROUTINE A                       12  01410  0 09140 00001 L
1147                B      *&20                                                7  01422  J 01448
1148      SETUPB    SBR    SETGC&5      SET RETURN ADDRESS                     7  01429  G 01467 B
                                                                                                      0
1149                MRCWG  XSTRTB,1     STORE ROUTINE B                       12  01436  D 09162 00001 L
1150                B      CKMOCA       GET IN RESET-RESTART MODE              7  01448  J 01469
1151      RESTRT    B      CKTAC        GO INTERROGATE TAOS 0&1&2              7  01455  J 01010
1152      SETGC     B      START        RETURN TO PROGRAM                      7  01462  J 02000
1153      ****************************************************************
1154      *$RECUEST RESET-RESTART MODE IF NOT NOW IN RESET-RESTART MODE.
1155      CKMOCA    SBR    CKGO&5                                              7  01469  G 01657 B
1156                SW     CKSWIT       SET TO SKIP HALT                       6  01476  , 01577
1157      CKMOCA    BCE    CKNOPW,XMODE,R  GO IF IN RESET-RE-START            12  01482  B 01569 09203 R
1158                CW     CKSWIT       SET TO HALT FOR SW.CHANGE              6  01494  ¤ 01577
1159                NOPWM               SWITCH TO REQUEST PRINT                1  01500  N
1160      CKSWCH    B      CKNEXT       SWITCH SETTING ONLY ONCE               7  01501  J 01539
1161                SW     CKSWCH       PER PROGRAM PASS                       6  01508  , 01501
1162                B      TYP1                                                7  01514  J 01120
1163                DCW    @ INHIBIT PRINTOUT@,G                              17  01537
1164      CKNEXT    B      TYP1                                                7  01539  J 01120
1165                DCW    @ CHK CTRL TO RST-RSTRT@,G                         22  01567
1166      CKNOPW    B      ODCFIL       GO READY ANY 1405 PRESENT              7  01569  J 08937
1167                NOPWM                                                      1  01576  N
1168      CKSWIT    B      CKGO         GO IF NO SWITCH CHANGES                7  01577  J 01652
1169                H                   WAIT FOR SWITCH CHANGE                 1  01584  .
```

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PGLIN    LABEL     OPCOO  OPERANO                                      CT  AOORS  INSTRUCTION

1171               MLCS   @R@,XMODE                                    12  01585  D 09305 09203 3
1172               NOPWM                SWITCH TO TYPE ERROR STOP       1  01597  N
1173     CKERRS    B      CKGO          MESSAGE ONLY ONCE               7  01598  J 01652
1174               SW     *-12                                          6  01605  , 01598
1175               B      TYP1                                          7  01611  J 01120
1176               DCW    @ IF THIS MODE ERR STOPS-ERR @               28  01645
1177               OC     RSETER                                        5  01650  02997
                           G
1178               OCW    @M@                                           1  01651
1179     CKGO      B      0             RETURN TO PROGRAM               7  01652  J 00000
1180     ****************************************************************
1181     *$COMMCN ERROR CLOSEC SUBROUTINE.
1182     ERROR     SBR    ERRA                                          7  01659  G 01700 B
1183               SBR    ERRC&5                                        7  01666  G 01730 B
1184               BCE    ERRB,TADC,1   GO IF TYPING BYPASSED          12  01673  B 01702 01000 1
1185               B      TYP1          TYPE ERROR HALT AODRESS         7  01685  J 01120
1186     ERRA      CCW    @ERR     @,G                                  9  01700
1187     ERRB      BCE    ERRC,TA02,1   GO TO HALT ON ERROR            12  01702  B 01725 01002 1
1188               A      &1,ERRC&5     SET TO BYPASS HALT             11  01714  A 09304 01730
1189     ERRC      B      0             GO BYPASS HALT                  7  01725  J 00000
1190     ****************************************************************
1191     *$CLCSEC SUBROUTINE TO SET UP FOR NORMAL MOOE OF OPERATION.
1192     NORMAL    SBR    SETGC&5       SET RETURN AOORESS              7  01732  G 01467 B
                                                                                             D
1193               MRCWG  XSTRTC,1      STORE ROUTINE C                12  01739  D 09176 00001 L
1194               BCE    NORMAA,XMCCE,N  GO IF IN NORMAL              12  01751  B 01801 09203 N
1195               B      TYP1                                          7  01763  J 01120
1196               OCW    @ CHK CTRL TO NRML@,G                        17  01786
1197               H                    WAIT FOR SWITCH CHANGE          1  01788  .
1198               MLCS   @N@,XMOCE     SET NORMAL INOICATOR           12  01789  D 09306 09203 3
1199     NORMAA    B      RESTRT                                        7  01801  J 01455
```

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PGLIN    LABEL     OPCOD  OPERAND                                                        CT  ADDRS  INSTRUCTION

1201     ************************************************************
1202     *$CLCSEC SUBROUTINE TC PLACE AN INVALID CHARACTER IN LOCATION 00110
1203     *$CF CCRE MEMORY.
1204     CLINVD    SBR    CLINVA&5        SET RETURN ADDRESS                              7  01808  G 01875 B
1205               CW     CLINVB&1                                                        6  01815  ¤ 01835
1206               SAR    20                                                              7  01821  G 00020 A
1207               CS     12C             ATTEMPT TO CLEAR LAST DNE                       6  01828  / 00120
1208     CLINVB    CW     CLINVA&1                                                        6  01834  ¤ 01871
1209               SAR    20                                                              7  01840  G 00020 A
1210               MLCWA  @$.50@,112      STDRE EDIT B FIELD                             12  01847  D 09310 00112 X
1211               MCE    XECITA,112  ***GENERATE INVALID BLANK                          11  01859  E 09220 00112
1212     *                                IN ADDRESS 0110
1213     CLINVA    B      0                                                               7  01870  J 00000
1214     ************************************************************
1215     *$CLDSED SUBRDUTINE TD CLEAR INVALID CHARACTER AT LDCATICN ON 00110
1216     CLEARC    SBR    CLEARA&5        SET RETURN ADDRESS                              7  01877  G 01908 B
1217               CW     CLEARA&1                                                        6  01884  ¤ 01904
1218               SAR    20                                                              7  01890  G 00020 A
1219               CS     12C                                                             6  01897  / 00120
1220     CLEARA    B      0                                                               7  01903  J 00000
1221               NOP                                                                    1  01910  N
1222     ************************************************************
1223     *    ********************************************
1224     *    *                PROGRAM STARTS HERE           *
1225     *    ********************************************
1226     ************************************************************
1227               ORG    20C0                                                               02000
                                                                                                                 D
1228     START     MRCWG  XRDUTN,30       SET TO RSTRT RTNS AT 30                        12  02000  D 09184 00030 L
1229               B      CKTAC           GD INTERRDGATE TADS 0&1&2                       7  02012  J 01010
                                                                                                        G
1230               BA1    *&1                                                             7  02019  R 02026 M
1231               MLCWS  @CCC00@,X1      SET X1 FDR RDUTINE USE                         12  02026  D 09315 00029 7
1232               WCP    IDENT           TYPE PRDGRAM IDENTITY                          10  02038  M %TO 01250 W
                                                                                                        G
1233               BA1    *-16                                                            7  02048  R 02038 M
1234               CS     TOPMEM          SET UP IN CASE OF 1405                          6  02055  / 09899
1235               CS                                                                     1  02061  /
                           G
1236               MLCWS  @M@,TCPMEM&1    GM-WM TO 09900                                 12  02062  D 09316 09900 7
```

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PGLIN     LABEL     OPCOO  OPERAND                                                 CT  ADDRS  INSTRUCTION

1238      ***********************************************************************
1239      *$ENSURE THAT CONTROL CARD INFO IS PRESENT.
                                            G                                                          G
1240      CARDCK    BBE    NOCARD&6,SYS1&1,M  IS CTRL INFO PRESENT                 12  02074  W 02128 01257 M
1241                B      TYP1          NO                                        7  02086  J 01120
1242                DCW    @CCNTROL CARC INFO IS MISSING@,G                       28  02120
1243      NOCARD    H      CARDOK                                                  6  02122  . 02074
1244      ***********************************************************************
1245      *$CHECK TEST SWITCHES ROUTINE.                                                                  O
1246                MRCWG  XNRML,1                                                12  02128  0 09284 00001 L
1247                BNQ    ITR1                                                    7  02140  J 08719 Q
1248                B      TYP1                                                    7  02147  J 01120
1249                DCW    @ PRINT CTRL TO NRML@,G                                19  02172
1250                B      NORMAL        GO TO CLOSED SUBROUTINES                  7  02174  J 01732
1251                CW     NRMLAA&1                                                6  02181  □ 02562
1252                SAR    6                                                       7  02187  G 00006 A
1253                B      TYP1                                                    7  02194  J 01120
1254                DCW    @ CHK TST SW CHK.@,G                                   16  02216
1255                B      TYP1                                                    7  02218  J 01120
1256                DCW    @  1.COMP RESET,PRESS A CHK TST SW,@                   34  02258
1257                DC     @START@,G                                               5  02263
1258                B      TYP1                                                    7  02265  J 01120
1259                DCW    @  2.CHECK FOR.@,G                                     14  02285
1260                B      TYP1                                                    7  02287  J 01120
1261                DCW    @    STOP WITH ALL PROCESS ALARMS ON@,G                35  02328
1262                B      TYP1                                                    7  02330  J 01120
1263                DCW    @    TYPEOUT.@,G                                       12  02348
1264                B      TYP1                                                    7  02350  J 01120
1265                DCW    @        SW.1-E ****S@,G                               18  02374
1266                B      TYP1                                                    7  02376  J 01120
1267                DCW    @                 -----@,G                             18  02400
1268                B      TYP1                                                    7  02402  J 01120
1269                DCW    @        SW.2-E BLANK@,G                               18  02426
```

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PGLIN    LABEL     OPCOD  OPERAND                                      CT  ADDRS  INSTRUCTION

1271               B      TYP1                                          7  02428  J 01120
1272               DCW    @     SW.3-E 00002@,G                        18  02452
1273               B      TYP1                                          7  02454  J 01120
1274               DCW    @  3.IF WRCNG-ERR @                          17  02477
1275               DC     NRMLER                                        5  02482  02579
                           G
1276               DCW    @M@                                           1  02483
1277               B      TYP1                                          7  02484  J 01120
1278               DCW    @  4.REPEAT 1-3 FOR 3 CHK TESTS@,G           30  02520
1279               B      TYP1                                          7  02522  J 01120
1280               DCW    @ FOR NEXT CHK-RESET,START,START@,G          31  02559
                                                                                                O
1281     NRMLAA    MRCWG  XNRML,1         SET ROUTINE FOR CHK TST      12  02561  0 09284 00001 L
1282               H      NRMLAB          WAIT FOR TEST                 6  02573  . 02580
1283     NRMLER    H                      ERROR HALT                    1  02579  .
1284     *ERRCR HALT-
1285     *     IF A PROCESS ALARM IS NOT ON-
1286     *         -AND ALL FCLLOWING AUTO ROUTINES ARE
1287     *          SUCCESSFUL-PROBABLY AN INDICATOR FAILURE.
1288     *         -AND ONE CF THE FOLLOWING AUTO ROUTINES
1289     *          FAIL-REFER TO AUTC ROUTINE ERROR HALT.-OR
1290     *          STATIC SCOPE POINT-LOGIC 18.14.08.
1291     *     IF E CHARACTER TYPED INCORRECTLY-
1292     *         SCCPE POINT-42.1C.10 2E,11C4H03E
1293     *     IF SYSTEM APPEARS TO BE HUNG IN A LOOP WITH NO
1294     *     ALARMS ON INSTEAD OF STOPPING WITH ALARMS ON-
1295     *         SCOPE POINT-18.14.C8 1B,1102E17A
1296     NRMLAB    BNQ    ITR1                                          7  02580  J 08719 Q
1297               BCE    NRMLAA,TA01,1                                12  02587  B 02561 01001 1
1298               CW     CKSWCH          CLR PRINT INHIBIT SWITCH      6  02599  □ 01501
1299               CW     CKERRS          CLR RST-RSTRT ERR PRT SW      6  02605  □ 01598
```

```
PGLIN   LABEL    OPCOD  OPERAND                                          CT  ADDRS  INSTRUCTION

1301    *****************************************************************
1302    *$CHECK THE RESTART MODE OF THE CHECK CONTROL SWITCH BY
1303    *$GENERATING AN ASSEMBLY CHECK ALARM.
                                                                                                  D
1304    RSTDAA   MRCWG  XSTRTA,1      SET UP FOR RESET-RESTART           12  02611  D 09140 00001 L
1305             CW     RSTART&1                                          6  02623  ¤ 02745
1306             SAR    20                                                7  02629  G 00020 A
1307             SAR    SETGO&5                                           7  02636  G 01467 A
1308             B      CKTAC         GO INTERROGATE TADS 0&1&2           7  02643  J 01010
1309             BW     RSTABA,CKSWCH                                    12  02650  V 02687 01501 1
1310             B      TYP1                                              7  02662  J 01120
1311             DCW    @ INHIBIT PRINTOUT@,G                            17  02685
1312    RSTABA   B      TYP1                                              7  02687  J 01120
1313             DCW    @ CHK CTRL TO RSTRT@,G                           18  02711
1314             H                    WAIT FOR SWITCH CHANGES             1  02713  .
1315             SW     CKSWCH        SET INHIBIT SWITCH                  6  02714  , 01501
1316             MLCS   @E@,XMODE     SET RESTART INDICATOR              12  02720  D 09317 09203 3
1317             BCE    RSTAAA,TADC,1                                    12  02732  B 02785 01000 1
1318    RSTART   B      TYP1                                              7  02744  J 01120
1319             DCW    @ IF THIS MODE ERR STOPS-ERR @                   28  02778
1320             DC     RSTAER                                            5  02783  02853
                          G
1321             DCW    @M@                                               1  02784
1322    RSTAAA   CW     RSTAST&1                                          6  02785  ¤ 02855
1323             SAR    20                                                7  02791  G 00020 A
1324    *    ***********************************************
1325    RSTARP   CS     120           CLEAR EDIT B FIELD  *               6  02798  / 00120
1326         *   MLCWA  @$.50@,112    STORE EDIT B FIELD  *              12  02804  D 09310 00112 X
1327         *   MCE    XECITA,112    A-   @@@,B-$.50     *              11  02816  E 09220 00112
1328    *    *                 THIS EDIT SHOULD CAUSE AN INVALID  *
1329    *    *                 BLANK IN ADDRESS 110 DURING SCAN 3,*
1330    *    *                 THUS CAUSING AN ASSEMBLY CHK ALARM.*
1331    RSTAAD   BNQ    ITR1                                  *           7  02827  J 08719 Q
1332         *   BCE    RSTARP,COMTAC,C  TAD0&1-1,TAD2-NOT1*             12  02834  B 02798 01119 C
1333    *    ***********************************************
```

```
PGLIN     LABEL      OPCOO  OPERANO                                           CT  ADDRS  INSTRUCTION

1335                 B      RSTAND         GO TO ENO ROUTINE                   7  02846  J 02862
1336      RSTAER     H                     DUMMY ERROR HALT                    1  02853  .
1337      *ERRCR-ALARM STOP OCCURREO WITH CHECK CONTROL SWITCH
1338      *IN RESTART MOOE.
1339      *STATIC SCCPE POINT-13.42.10 4C,1183826G
1340      RSTAST     B      ERROR          GO TO ERROR ROUTINE                 7  02854  J 01659
1341                 H                                                         1  02861  .
1342      *ERRCR HALT-ASSEMBLY CHECK ALARM,WITH CHECK CONTROL
1343      *SWITCH IN RESTART MCDE,CAUSEO RESET-RESTART.
1344      *PROBABLY CPERATCR ERROR-OR CHECK CONTROL SWITCH IS
1345      *WIRED WRONG.
1346      RSTANO     BNQ    ITR1                                               7  02862  J 08719 Q
1347                 BCE    RSTARP,TA01,1                                     12  02869  B 02798 01001 1
1348                 B      CLEARC         CLEAR INVALIO CHARACTERS            7  02881  J 01877
```

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PGLIN     LABEL      OPCOO  OPERANO                                                  CT AOORS  INSTRUCTION

1350      *******************************************************************
1351      *$CHECK THE RESET-RESTART MODE OF THE CHECK CONTROL SWITCH AND THE
1352      *$ASSEMBLY CHECK ALARM CIRCUITRY BY GENERATING AN ASSEMBLY CHECK
1353      *$ALARM.
1354      RSETBB     B      SETUPA        GO TO CLOSEO SU8ROUTINES                    7 02888  J 01403
1355      *    **************************************************
1356      RSETRP     CW     RSETAA&1                            *                    6 02895  ¤ 02915
1357           *     SAR    20                                  *                    7 02901  G 00020 A
1358           *     CS     120           CLEAR EOIT 8 FIELO    *                    6 02908  / 00120
1359      RSETAA     CW     RSETAB&1                            *                    6 02914  ¤ 02940
1360           *     SAR    20                                  *                    7 02920  G 00020 A
1361           *     MLCWA  @$.50@,112    STORE EDIT 8 FIELO    *                   12 02927  0 09310 00112 X
1362      RSETAB     CW     RSETNO&1                            *                    6 02939  ¤ 02999
1363           *     SAR    20                                  *                    7 02945  G 00020 A
1364           *     MCE    XECITA,112    GENERATE ASSEM8LY CHK*                    11 02952  E 09220 00112
1365           *     8NQ    ITR1                                *                    7 02963  J 08719 Q
1366           *     BCE    RSETRP,COMTAC,C  TA00&1-1,TA02-NOT1*                    12 02970  8 02895 01119 C
1367      *    **************************************************
1368                 8      ERROR         GO TO ERROR ROUTINE                         7 02982  J 01659
1369                 H                                                                1 02989  .
1370      *ERROR HALT-ASSEMBLY CHECK ALARM,WITH CHECK CONTROL
1371      *SWITCH IN RESET-RESTART MODE,CAUSEO ONLY RESTART-OR
1372      *ASSEMBLY CHECK ALARM CIRCUITRY IS FAILING.
1373      *SCOPE LOOP POINT-18.14.08 4F,1102022G
1374                 B      RSETNO        GO TO ENO ROUTINE                           7 02990  J 02998
1375      RSETER     H                    OUMMY ERROR HALT                            1 02997  .
1376      *ERROR-WHILE THE CHECK CONTROL SWITCH WAS IN RESET-
1377      *RESTART MODE,A MASTER ERROR CAUSEO AN ALARM STOP.
1378      *MASTER ERROR IS PROBABLY DUE TO AN ASSEM8LY CHECK
1379      *ALARM GENERATEO BY ABOVE ROUTINE.
1380      *STATIC SCOPE POINT-13.42.10 1E,1103H18C
1381      RSETNO     BNQ    ITR1                                                      7 02998  J 08719 Q
1382                 BCE    RSETRP,TA01,1                                            12 03005  8 02895 01001 1
1383                 8      CLEARC        CLEAR INVALIO CHARACTERS                    7 03017  J 01877
```

```
PGLIN     LABEL      OPCOD  OPERAND                                             CT  ADDRS  INSTRUCTION

1385      ***************************************************************
1386      *$CHECK THE ABILITY OF A CLEAR STORAGE INSTRUCTION TO CLEAR AN
1387      *$INVALID CHARACTER IN CORE WITHOUT CAUSING AN ALARM.
1388                 B      SETUPA          GO TO CLOSED SUBROUTINES            7  03024  J 01403
1389      *     ***********************************************
1390      CLSTRP     B      CLINVD          MAKE ADDR 110 INVALID*   18.12.03   7  03031  J 01808
1391           *     CW     CLSTST&1        SET FOR RESET-RESTART*   3E-L 5E    6  03038  ¤ 03070
1392           *     SAR    20                                   *              7  03044  G 00020 A
1393           *     MLNA   XATES,XBAR      AAR-BAR STORAGE TO 8S*             12  03051  D 09215 09139 /
1394           *     CS     12C          ***CLEAR INVALID CHAR.  *              6  03063  / 00120
1395      CLSTST     BNQ    ITR1                                 *              7  03069  J 08719 Q
1396           *     BCE    CLSTRP,COMTAD,C  TAD0&1-1,TAD2-NOT1*               12  03076  B 03031 01119 C
1397      *     ***********************************************
1398                 C      XBAR,@88888@  CS OK                                11  03088  C 09139 09322
1399                 BE     CLSTND          GO IF YES                           7  03099  J 03114 S
1400                 B      ERROR           GO TO ERROR ROUTINE                 7  03106  J 01659
1401                 H                                                          1  03113  .
1402      *ERROR HALT-CLEAR STORAGE OF AN INVALID CHARACTER
1403      *CAUSED A RESET-RESTART.
1404      *SCOPE LOOP POINT-18.12.03 3E,11D2B22L
1405      CLSTND     BNQ    ITR1                                                7  03114  J 08719 Q
1406                 BCE    CLSTRP,TAD1,1                                      12  03121  B 03031 01001 1
```

```
                     1410 ALARM PROGRAM                                                          C022        PAGE  32
PGLIN     LABEL      OPCOD  OPERAND                                                   CT  ADDRS  INSTRUCTION

1408      ********************************************************************
1409      *$CHECK IO INTERLOCK CHECK WITH % TYPE OP CODE ON E CHANNEL.
1410                 B      SETUPA        GO TO CLOSED SUB ROUTINES                    7  03133  J 01403
1411                 CW     IOECST&1      SET FOR RESET-RESTART                        6  03140  □ 03186
1412                 SAR    20                                                         7  03146  G 00020 A
1413      *    **************************************************
1414      IOECRP     RCP    XSPACE        SET E CHANNEL INTRLK *   18.14.08           10  03153  M %TO 09204 R
1415           *     MLNA   XATES,XBAR    AAR-BAR STORAGE TO 8S*   4E                 12  03163  D 09215 09139 /
1416      IOECAR     RCP    XSPACE     ***CAUSE IO INTRLK CHECK*   18.14.11           10  03175  M %TO 09204 R
                                                                                                         G
1417      IOECST     BA1    *&1                                *   3D 4D 5E            7  03185  R 03192 M
1418           *     BNQ    ITR1                               *                       7  03192  J 08719 Q
1419           *     BCE    IOECRP,COMTAC,C  TAD0&1-1,TAD2-NOT1*                      12  03199  B 03153 01119 C
1420      *    **************************************************
1421      IOECAA     C      XAAR,XOPRSA   CORRECT RST-RSTRT OCCURR                    11  03211  C 09134 09233
1422                 BE     IOECND        GO IF YES                                    7  03222  J 03237 S
1423      IOECAB     B      ERROR         GO TO ERROR ROUTINE                          7  03229  J 01659
1424                 H                                                                 1  03236  .
1425      *ERROR HALT-IO INTERLOCK ALARM DID NOT CAUSE CORRECT
1426      *RESET RESTART
1427      *SCOPE LOOP POINT-18.14.08 4E,11D2C21E
1428      IOECND     BNQ    ITR1                                                       7  03237  J 08719 Q
1429                 BCE    IOECRP,TAD1,1                                             12  03244  B 03153 01001 1
```

```
PGLIN     LABEL      OPCOD  OPERAND                                                  CT  ADDRS  INSTRUCTION

1431      ***********************************************************************
1432      *$CHECK IO INTERLOCK CHECK WITH 2 CHAR E CHANNEL OP CODE.
1433      IOETCH     B      SETUPA         GO TO CLOSEO SUBROUTINES                   7  03256  J 01403
1434                 CW     IOETST&1       SET FOR RESET-RESTART                      6  03263  ¤ 03293
1435                 SAR    20                                                        7  03269  G 00020 A
1436      *    **********************************************
1437      IOETRP     SSF    0              SSF TO SET INTERLOCK *   18.14.11          2  03276  K 0
1438           *     MLNA   XATES,XBAR     AAR-BAR STORAGE TO 8S*   4D 5D            12  03278  D 09215 09139 /
1439      IOETAR     SSF    0           ***SSF-IO INTERLOCK ALRM*                     2  03290  K 0
                                                                                                         G
1440      IOETST     BA1    *&1                                    *                  7  03292  R 03299 M
1441           *     BNQ    ITR1                                   *                  7  03299  J 08719 Q
1442           *     BCE    IOETRP,COMTAC,C  TAOO&1-1,TAD2-NOT1*                     12  03306  B 03276 01119 C
1443      *    **********************************************
1444      IOETAA     C      XAAR,XOPRSA    CORRECT RST-RSTRT OCCUR                   11  03318  C 09134 09233
1445                 6E     IOETND         GO IF YES                                  7  03329  J 03344 S
1446      IOETAB     B      ERROR          GO TO ERROR ROUTINE                        7  03336  J 01659
1447                 H                                                                1  03343  .
1448      *ERRCR HALT-TWO SUCCESSIVE 2 CHARACTER E CHANNEL OP
1449      *CCDES FAIL TO CAUSE AN IO INTERLOCK ALARM.
1450      *SCOPE LCOP POINT-16.14.11 4C,11D2C05C
1451      IOETND     BNQ    ITR1                                                      7  03344  J 08719 Q
1452                 BCE    IOETRP,TAD1,1                                            12  03351  B 03276 01001 1
```

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                        1410 ALARM PROGRAM                                                      CD22        PAGE  34
PGLIN    LABEL      OPCOD  OPERAND                                                  CT  ADDRS  INSTRUCTION

1454     ***********************************************************************
1455     *$CHECK IO INTERLOCK CHECK WITH □ TYPE OP CODE ON F CHANNEL IF
1456     *$SYSTEM HAS 2ND CHANNEL.
1457                BCE    IOFLND&19,SYS1&13,   SKIP RTN-NO CHN 2                   12  03363  B 03498 D1269
1458                B      SETUPA        GO TO CLOSED SUBROUTINES                    7  03375  J 01403
1459                CW     IOFLST&1      SET FOR RESET RESTART                       6  D3382  □ 03428
146D                SAR    2D                                                        7  D3388  G DD020 A
1461     *    **************************************************
1462      IOFRP     DCW    @L□TO@        RCP CHANNEL 2 OP CODE*   18.14.11           4  D3395
1463        *       DC     XSPACE        TO SET IO INTERLOCK  *   4D-G 5F            5  034D3  D9204
1464        *       DC     @R@                                *                      1  D3404
1465        *       MLNA   XATES,XBAR    AAR-BAR STORAGE TO BS*                     12  D34D5  D D9215 D9139 /
1466      IOFAR     DCW    @L□TO@        RCP CHANNEL 2 OP CODE*                      4  D3417
1467        *       DC     XSPACE     ***CAUSE IO INTRLK ALARM*                      5  D3425  D92D4
1468        *       DC     @R@                                *                      1  03426
                                                                                                     G
1469     IOFLST     BA2    *&1                                *                      7  D3427  X D3434 M
147D        *       BNQ    ITR1                               *                      7  D3434  J DB719 Q
1471        *       BCE    IOFRP,COMTAD,C  TAD0&1-1,TAD2-NOT 1*                     12  03441  B 03395 01119 C
1472     *    **************************************************
1473     IOFLAA     C      XAAR,XOPRSA   CORRECT RST-RSTRT OCCUR                    11  D3453  C D9134 09233
1474                BE     IOFLND        GO IF YES                                   7  D3464  J 03479 S
1475     IOFLAB     B      ERROR         GO TO ERROR ROUTINE                         7  D3471  J 01659
1476                H                                                                1  D3478  .
1477     *ERROR HALT-TWO SUCCESSIVE □ TYPE F CHANNEL OP CODES
1478     *FAIL TO CAUSE AN IO INTERLOCK ALARM.
1479     *SCOPE LOOP POINT-18.14.11 4C,11D2CD5C
148D     IOFLND     BNQ    ITR1                                                      7  D3479  J D8719 Q
1481                BCE    IOFRP,TAD1,1                                             12  D3486  B D3395 01D01 1
```

```
PGLIN     LABEL     CPCOD  OPERAND                                              CT  ADDRS  INSTRUCTION

1483      ****************************************************************
1484      *$CHECK IO INTERLOCK CHECK WITH 2 CHAR F CHANNEL OP CODE IF SYSTEM
1485      *$HAS READER ON SECOND CHANNEL.
1486                BCE    IOFTND&19,CHN2&12,   SKP IF NO F RDR                 12  03498  B 03617 01358
1487      IOFTCH    B      SETUPA        GO TO CLOSED SUBROUTINES                7  03510  J 01403
1488                CW     IOFTST&1      SET FOR RESET-RESTART                   6  03517  ¤ 03547
1489                SAR    20                                                    7  03523  G 00020 A
1490      *    **************************************************
1491      IOFTRP    CCW    @4@           CHANNEL 2 SELECT     *   24.01.03       1  03530
1492           *    CC     @0@           STACKER & FEED OP    *   4F 5F          1  03531
1493           *    MLNA   XATES,XBAR    AAR-BAR STORAGE TO 8S*                 12  03532  D 09215 09139 /
1494      IOFTAR    CCW    @4@        ***SSF-IO INTRLK ALARM  *                  1  03544
1495           *    CC     @0@                                *                  1  03545
                                                                                                     G
1496      IOFTST    BA1    *&1                                *                  7  03546  R 03553 M
1497           *    BNQ    ITR1                               *                  7  03553  J 08719 Q
1498           *    BCE    IOFTRP,COMTAD,C  TAD0&1-1,TAD2-NOT1*                 12  03560  B 03530 01119 C
1499      *    **************************************************
1500      IOFTAA    C      XAAR,XOPRSA   CORRECT REST-RSTRT OCCUR               11  03572  C 09134 09233
1501                BE     IOFTND        GO IF YES                               7  03583  J 03598 S
1502                B      ERROR         GO TO ERROR ROUTINE                     7  03590  J 01659
1503                H                                                            1  03597  .
1504      *ERROR HALT-TWO SUCCESSIVE 2 CHARACTER F CHANNEL OP
1505      *CODES FAIL TO CAUSE AN IO INTERLOCK ALARM.
1506      *SCOPE LOOP POINT-LOGIC 24.01.03 4F,11F6C26G
1507      IOFTND    BNQ    ITR1                                                  7  03598  J 08719 Q
1508                BCE    IOFTRP,TAD1,1                                        12  03605  B 03530 01001 1
```

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PGLIN    LABEL    OPCOD  OPERAND                                                   CT  ADDRS  INSTRUCTION

1510     *************************************************************
1511     *$CHECK THE ABILITY CF THE ADDRESS CHANNEL CHECK ALARM TO CAUSE A
1512     *$MASTER ERROR.
1513     ACMEAA   B      SETUPA        GO TO CLCSED SUBROUTINES                     7  03617  J 01403
1514              MLCWS  @N@,8         NOP SBR INSTRUCTION                         12  03624  D 09306 00008 7
1515              CW     ACMEST&1      SET FOR RESET-RESTART                        6  03636  □ 03674
1516              SAR    20                                                         7  03642  G 00020 A
1517     *    *********************************************
1518     ACMERP   MLNA   XATES,XBAR    AAR-BAR STORAGE TO 8S*   18.14.08           12  03649  D 09215 09139 /
1519          *   SCNLS  5           ***CAUSE ADDR CHNL CHECK*   4H-R                6  03661  D 00005
1520          *   DC     @0C0 0 @      WITH BLANK IN B ADDR *                       6  03672
1521     ACMEST   BNQ    ITR1                                *                      7  03673  J 08719 Q
1522          *   BCE    ACMERP,COMTAC,C  TAD0&1-1,TAD2-NOT1*                      12  03680  B 03649 01119 C
1523     *   **********************************************
1524              C      XAAR,@0CC05@  CORRECT RST-RSTRT OCCUR                     11  03692  C 09134 09327
1525              BE     ACMEND        GO IF YES                                    7  03703  J 03718 S
1526     ACMEER   B      ERROR         GO TO ERROR ROUTINE                          7  03710  J 01659
1527              H                                                                 1  03717  .
1528     *ERRCR HALT-ADDRESS CHANNEL CHECK ALARM DID NOT CAUSE
1529     *A RESET RESTART.
1530     *SCOPE LOOP POINT-18.14.08 4H,11D2C21D
1531     ACMEND   BNQ    ITR1                                                       7  03718  J 08719 Q
1532              BCE    ACMERP,TAD1,1                                             12  03725  B 03649 01001 1
```

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                                                                                          C022         PAGE  37
                   '410 ALARM PROGRAM
PGLIN    LABE!     OPCOD  OPERAND                                                      CT  ADDRS  INSTRUCTION

1534     ***********************************************************************
1535     *$CHECK ADDRESS CHECK ALARM CIRCUITRY BY GENERATING AN ADDRESS WRAP
1536     *$ARCUND LOW.
1537                 B      SETUPA       GO TO CLOSED SUBROUTINES                       7  03737  J 01403
1538              D  B      PATCHA            PATCH AT END  * BYPASS ROUTINE  *         7  03744  J 09373
1539              D  DCW    @N     @          FILL IN       *  IF 100K SYSTEM *         6  03756
1540     *    *****************************************************18.14.08
1541     ADRCRP      MLNA   XATES.XBAR    AAR-BAR STORAGE TO 8S*      41-F             12  03757  D 09215 09139 /
1542          *      SCNLS  2.2           SET AAR-BAR TO 00001 *                       12  03769  D 00002 00002
1543                 SCNLS  1.0         ***CAUSE ADDRESS CHECK  *   18.14.11           12  03781  D 00001 00000
1544     ADRCST      BNQ    ITR1                                *     3C 1B 2B          7  03793  J 08719 Q
1545          *      BCE    ADRCRP.COMTAD.C  TADO£1-1.TAD2-NOT1*   4B 5B 4C            12  03800  B 03757 01119 C
1546     *     ********************************************   5C 5G
1547                 C      XBAR.399996   CORRECT RST-RSTRT OCCUR                      11  03812  C 09139 09331
1548                 BE     ADRCND        GO IF YES                                     7  03823  J 03838 S
1549                 B      ERROR         GO TO ERROR ROUTINE                           7  03830  J 01659
1550                 .H                                                                 1  03837  .
1551     *ERROR HALT-WRAP AROUND LOW FAILED TO CAUSE AN ADDRESS
1552     *CHECK ALARM.
1553     *SCOPE LOOP POINT-18.14.08 41.11D2C21C
1554     ADRCND      BNQ    ITR1                                                        7  03838  J 08719 Q
1555                 BCE    ADRCRP.TAD1.1                                              12  03845  B 03757 01001 1
```

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PGLIN     LABEL     OPCOD  OPERAND                                                    CT  ADDRS  INSTRUCTION

1557      *****************************************************************
1558      *$CHECK ADDRESS CHECK ALARM CIRUITRY BY GENERATING AN ADDRESS WRAP
1559      *$AROUND HIGH.
1560                B      SETUPA         GO TO CLOSED SUBROUTINES                      7  03857  J 01403
1561                CW     ADCHST&1       SET FOR RESET-RESTART                         6  03864  ¤ 03914
1562                SAR    20                                                           7  03870  G 00020 A
1563                MLCS   SYS1&1,ADCHCK&6  SET MEMORY SIZE                            12  03877  D 01257 03907 3
1564      *    ***********************************************14.47.01
1565      ADCHRP    MLNA   XATES,XBAR     A : -BAR STORAGE TO 8S*      1B&1C OR        12  03889  D 09215 09139 /
1566      ADCHCK    SCNR   ADCHST,09999   ***CAUSE AODR CHECK  *       1D OR 1F        12  03901  D 03913 09999 8
1567      ADCHST    BNQ    ITR1                                *       OR 1G OR         7  03913  J 08719 Q
1568           *    BCE    ADCHRP,COMTAD,C  TA00&1-1,TA02-NOT1*     1H 58 4C           12  03920  B 03889 01119 C
1569      *    ****************************************************
1570                C      XBAR,@00008    CORRECT RST-RSTRT OCCUR                      11  03932  C 09139 09335
1571                BE     ADCHND         GO IF YES                                     7  03943  J 03958 S
1572                B      ERROR          GO TO ERROR ROUTINE                           7  03950  J 01659
1573                H                                                                   1  03957  .
1574      *ERROR HALT-WRAP AROUND HIGH FAILED TO CAUSE AN
1575      *ADDRESS CHECK ALARM.
1576      *SCOPE LOOP POINT-18.14.11 48,1102K14K
1577      ADCHND    BNQ    ITR1                                                         7  03958  J 08719 Q
1578                BCE    ADCHRP,TAD1,1                                               12  03965  B 03889 01001 1
```

```
PGLIN    LABEL     OPCOD  OPERAND                                               CT  ADDRS  INSTRUCTION

1580     **********************************************************************
1581     *$CHECK ADDRESS CHECK ALARM CIRCUITRY BY HAVING AN A BIT IN THE
1582     *$UNITS POSITION OF THE B ADDRESS.*110 TIME*.
1583               B      SETUPA          GO TO CLOSED SUBROUTINES               7  03977  J 01403
1584               MLCWS  @N@,8           NOP SBR INSTRUCTION                   12  03984  D 09306 00008 7
1585               CW     ADCAST&1        SET FOR RESET-RESTART                  6  03996  ¤ 04034
1586               SAR    20                                                     7  04002  G 00020 A
1587     *    *********************************************18.14.11
1588     ADCARP    MLNA   XATES,XBAR      AAR BAR STORAGE TO 8S*      1B-P 2A 3A  12  04009  D 09215 09139 /
1589          *    SCNLS  5            ***CAUSE ADDRESS CHECK  *      3B           6  04021  D 00005
1590          *    DC     @0C05‡ @        WITH A BIT AT I/O TME*      11.20.09     6  04032
1591     ADCAST    BNQ    ITR1                                    *   2C-A         7  04033  J 08719 Q
1592          *    BCE    ADCARP,COMTAD,C  TA00&1-1,TAD2-NOT1*  15.50.05         12  04040  B 04009 01119 C
1593     *    *********************************************  2I
1594               C      XAAR,@0C005@  CORRECT RST-RSTRT OCCUR                 11  04052  C 09134 09327
1595               BE     ADCAND          GO IF YES                              7  04063  J 04078 S
1596               B      ERROR           GO TO ERROR ROUTINE                    7  04070  J 01659
1597               H                                                             1  04077  .
1598     *ERROR HALT-AN A BIT IN THE UNITS POSITION OF THE B
1599     *ADDRESS FAILED TO CAUSE AN ADDRESS CHECK ALARM.
1600     *SCOPE LOOP POINT-18.14.11 18,11D2K15D
1601     ADCAND    BNQ    ITR1                                                   7  04078  J 08719 Q
1602               BCE    ADCARP,TAD1,1                                         12  04085  B 04009 01001 1
```

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PGLIN     LABEL       OPCOD  OPERAND                                                  CT  ADDRS  INSTRUCTION

1604      *******************************************************************
1605      *$CHECK ADDRESS CHECK ALARM WITH A 8 BIT IN THE THOUSANDS POSITION
1606      *$CF THE B ACORESS.*17 TIME*.
1607                  B      SETUPA          GO TO CLOSED SUBROUTINES                  7  04097  J 01403
1608                  MLCWS  @N@,8           NOP THE SBR INSTRUCTION                  12  04104  D 09306 00008 7
1609                  CW     ADCBST&1        SET FOR RESET-RESTART                     6  04116  ¤ 04154
1610                  SAR    20                                                        7  04122  G 00020 A
1611      *    *****************************************************
1612      ADCBRP      MLNA   XATES,XBAR      AAR-BAR STORAGE TO 8S*   15.50.05        12  04129  D 09215 09139 /
1613           *      SCNLS  5           ***CAUSE ADDRESS CHECK  *       21            6  04141  D 00005
1614           *      CC     @0.CC5 @        WITH B BIT AT 17 TIME*   11.20.09         6  04152
1615      ADCBST      BNQ    ITR1                                  *   28-H             7  04153  J 08719 Q
1616           *      BCE    ADCBRP,COMTAC,C  TADC&1-1,TAD2-NOT1*                     12  04160  B 04129 01119 C
1617      *    *****************************************************
1618                  C      XAAR,@CCC05@  CORRECT RST-RSTRT OCCUR                    11  04172  C 09134 09327
1619                  BE     ADCBND          GO IF YES                                 7  04183  J 04198 S
1620                  B      ERRCR           GO TO ERROR ROUTINE                       7  04190  J 01659
1621                  H                                                                1  04197  .
1622      *ERRCR HALT-THE B BIT IN THE THOUSANDS POSITION OF THE
1623      *B ACCRESS FAILED TO CAUSE AN ADDRESS CHECK ALARM.
1624      *SCOPE LOOP POINT-18.14.11 1B,1102K15P
1625      ADCBND      BNQ    ITR1                                                      7  04198  J 08719 Q
1626                  BCE    ADCBRP,TAD1,1                                            12  04205  B 04129 01001 1
```

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                1410 ALARM PROGRAM                                                         C022        PAGE  41
PGLIN     LABEL     OPCOD  OPERAND                                                   CT  ADDRS  INSTRUCTION

1628      ******************************************************************
1629      *$CHECK THE ADDRESS CHECK ALARM WITH ZONE BITS IN THE 10 THOUSANDS
1630      *$POSITION OF THE B ADDRESS.*I6 TIME*
1631                B      SETUPA         GO TO CLOSED SUBROUTINES               7  04217  J 01403
1632                MLCWS  @N@,8          NOP THE SBR INSTRUCTION               12  04224  D 09306 00008 7
1633                CW     ADCCST&1       SET FOR RESET-RESTART                  6  04236  ¤ 04274
1634                SAR    20                                                    7  04242  G 00020 A
1635      *    ********************************************
1636      ADCCRP    MLNA   XATES,XBAR     AAR-BAR STORAGE TO 8.S*   11.20.09    12  04249  D 09215 09139 /
1637           *    SCNLS  5           ***CAUSE ADDRESS CHECK  *   2C-B          6  04261  D 00005
                            C
1638           *  , CC     @MCCC5 @       WITH ZONE BITS AT I6 *                 6  04272
1639      ADCCST    BNQ    ITR1                                *                 7  04273  J 08719 Q
1640           *    BCE    ADCCRP,COMTAD,C  TADO&1-1,TAD2-NOT1*                 12  04280  B 04249 01119 C
1641      *    ********************************************
1642                C      XAAR,@CCC05@  CORRECT RST-RSTRT OCCUR                11  04292  C 09134 09327
1643                BE     ADCCND         GO IF YES                              7  04303  J 04318 S
1644                B      ERROR          GO TO ERROR ROUTINE                    7  04310  J 01659
1645                H                                                            1  04317  .
1646      *ERROR HALT-ZONE BITS IN THE TEN THOUSANDS POSITION OF
1647      *THE B ADDRESS FAILED TO CAUSE AN ADDRESS CHECK ALARM.
1648      *SCOPE LOOP POINT-11.20.09 2C,11C1J18G
1649      ADCCND    BNQ    ITR1                                                  7  04318  J 08719 Q
1650                BCE    ADCCRP,TAD1,1                                        12  04325  B 04249 01001 1
```

```
PGLIN     LABEL     OPCOD  OPERAND                                                    CT  ADDRS  INSTRUCTION

1652      *******************************************************************
1653      *$CHECK THE ADDRESS CHECK ALARM WITH ZONE BITS IN THE UNITS
1654      *$POSITION OF THE A ADDRESS.*I5 TIME*.
1655                B      SETUPA         GO TO CLOSED SUBROUTINES               7  04337  J 01403
1656                MLCWS  ãNã,1          NOP THE SAR INSTRUCTION               12  04344  0 09306 00001 7
1657                CW     ADCDST&1       SET FOR RESET-RESTART                  6  04356  ¤ 04400
1658                SAR    20                                                    7  04362  G 00020 A
1659      *    **********************************************
1660      ADCDRP    MLNA   XATES,XBAR     AAR-BAR STORAGE TO 8S*   11.20.09     12  04369  0 09215 09139 /
1661           *    SCNLS  1,6            SET BAR TO 5,MOD BLNK*   2B-L         12  04381  0 00001 00006
1662           *    SCNLS            ***CAUSE ADDRESS CHECK  *                   1  04393  D
                              Q
1663           *    CC     ã0005Mã        WITH ZONE BITS AT I5 *                 5  04398
1664      ADCDST    BNQ    ITR1                                                  7  04399  J 08719 Q
1665           *    BCE    ADCDRP,COMTAC,C  TADO&1-1,TAD2-NOT1*                 12  04406  B 04369 01119 C
1666      *    **********************************************
1667                C      XBAR,ã00005ã   CORRECT RST-RSTRT OCCUR               11  04418  C 09139 09327
1668                BE     ADCDND         GO IF YES                              7  04429  J 04444 S
1669                B      ERROR          GO TO ERROR ROUTINE                    7  04436  J 01659
1670                H                                                            1  04443  .
1671      *ERROR HALT-ZONE BITS IN THE UNITS POSITION OF THE A
1672      *ADDRESS FAILED TO CAUSE AN ADDRESS CHECK ALARM.
1673      *SCOPE LOOP POINT-11.20.09 2B,11C1J18G
1674      ADCDND    BNQ    ITR1                                                  7  04444  J 08719 Q
1675                BCE    ADCDRP,TAD1,1                                        12  04451  B 04369 01001 1
```

```
PGLIN     LABEL       OPCOD  OPERAND                                                    CT  ADDRS  INSTRUCTION

1677      *******************************************************************
1678      *$CHECK THE ADDRESS CHECK ALARM WITH ZONE BITS IN THE THOUSANDS
1679      *$POSITION OF THE A ADDRESS.*I2 TIME*.
1680                  B      SETUPA          GO TO CLOSED SUBROUTINES                7  04463  J 01403
1681                  MLCWS  @N@,1           NOP THE SAR INSTRUCTION                12  04470  D 09306 00001 7
1682                  CW     ADCEST&1        SET FOR RESET-RESTART                   6  04482  ¤ 04526
1683                  SAR    20                                                      7  04488  G 00020 A
1684      *    *********************************************
1685      ADCERP      MLNA   XATES,XBAR      AAR-BAR STORAGE TO BS*   11.20.09      12  04495  D 09215 09139 /
1686          *       SCNLS  1,6             SET BAR TO 5,MOD BLNK*   2B-K          12  04507  D 00001 00006
1687           *      SCNLS               ***CAUSE ADDRESS CHECK  *                  1  04519  D
                               C
1688           *      CC     @0PC05@         WITH ZONE BITS AT I2 *                  5  04524
1689      ADCEST      BNQ    ITR1                                 *                  7  04525  J 08719 Q
1690           *      BCE    ADCERP,COMTAC,C  TAD0&1-1,TAD2-NOT1*                   12  04532  B 04495 01119 C
1691      *    *********************************************
1692                  C      XBAR,@00005@    CORRECT RST-RSTRT OCCUR                11  04544  C 09139 09327
1693                  BE     ADCEND          GO IF YES                               7  04555  J 04570 S
1694                  B      ERROR           GO TO ERROR ROUTINE                     7  04562  J 01659
1695                  H                                                              1  04569  .
1696      *ERROR HALT-ZONE BITS IN THE THOUSANDS POSITION OF THE
1697      *A ADDRESS FAILED TO CAUSE AN ADDRESS CHECK ALARM.
1698      *SCOPE LOOP POINT-11.20.09 2B,11C1J18G
1699      ADCEND      BNQ    ITR1                                                    7  04570  J 08719 Q
1700                  BCE    ADCERP,TAD1,1                                          12  04577  B 04495 01001 1
```

```
PGLIN     LABEL     OPCOD  OPERAND                                                  CT  ADDRS  INSTRUCTION

1702      ******************************************************************
1703      *$CHECK THE ADDRESS CHECK ALARM WITH ZONE BITS IN THE 10 THOUSANDS
1704      *$POSITION OF THE A ADDRESS.*11 TIME*.
1705                B      SETUPA        GO TO CLOSED SUBROUTINES                    7  04589  J 01403
1706                MLCWS  @N@,1         NOP THE SAR INSTRUCTION                    12  04596  D 09306 00001 7
1707                CW     ADCFST&1      SET FOR RESET-RESTART                       6  04608  □ 04652
1708                SAR    20                                                        7  04614  G 00020 A
1709      *    ***********************************************
1710      ADCFRP    MLNA   XATES,XBAR    AAR-BAR STORAGE TO 8S*    11.20.09         12  04621  D 09215 09139 /
1711          *     SCNLS  1,6           SET BAR TO 5,MOD BLNK*    2C-F             12  04633  D 00001 00006
1712          *     SCNLS   Q          ***CAUSE ADDRESS CHECK  *                     1  04645  D
1713          *     DC     @MC005@       WITH ZONE BITS AT 11 *                      5  04650
1714      ADCFST    BNQ    ITR1                                                      7  04651  J 08719 Q
1715          *     BCE    ADCFRP,COMTAD,C  TAD0&1-1,TAD2-NOT1*                     12  04658  B 04621 01119 C
1716      *    ***********************************************
1717                C      XBAR,@00005@  CORRECT RST-RSTRT OCCUR                    11  04670  C 09139 09327
1718                BE     ADCFND        GO IF YES                                   7  04681  J 04696 S
1719                B      ERROR         GO TO ERROR ROUTINE                         7  04688  J 01659
1720                H                                                                1  04695  .
1721      *ERROR HALT-ZONE BITS IN THE TEN THOUSANDS POSITION OF
1722      *THE A ADDRESS FAILED TO CAUSE AN ADDRESS CHECK ALARM.
1723      *SCOPE LOOP POINT-11.20.09 2C,11C1J18G
1724      ADCFND    BNQ    ITR1                                                      7  04696  J 08719 Q
1725                BCE    ADCFRP,TAD1,1                                            12  04703  B 04621 01001 1
```

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PGLIN     LABEL      OPCOD  OPERAND                                                     CT  ADDRS  INSTRUCTION

1727      ***********************************************************************
1728      *$CHECK INSTRUCTION CHECK ALARM CIRCUITRY VIA A BIT IN D MODIFIER
1729      *$OF TABLE LOOKUP.
1730                 B      SETUPA        GO TO CLOSED SUBROUTINES                   7  04715  J 01403
1731                 CW     ITBAST&1      SET FOR RESET-RESTART                      6  04722  ¤ 04760
1732                 SAR    20                                                       7  04728  G 00020 A
1733      *    *********************************************18.14.08
1734      ITBARP     MLNA   XATES,XBAR    AAR-BAR STORAGE TO 8S*                    12  04735  D 09215 09139 /
1735           *     DCW    @T@        ***CAUSE INSTRUCTION CHK*   4E-B              1  04747
1736           *     DC     XTBLA                                  *     18.14.11    5  04752  09234
1737           *     DC     XTBLB                                  *     3H          5  04757  09235
1738           *     DC     @X@                                    *     12.12.43    1  04758
1739      ITBAST     BNQ    ITR1                                   *     1G 3G 4G    7  04759  J 08719 Q
1740           *     BCE    ITBARP,COMTAC,C  TADO&1-1,TAD2-NOT1*                    12  04766  B 04735 01119 C
1741      *    *******************************************
1742                 C      XBAR,&XTBLB   CORRECT RST-RSTRT OCCUR                   11  04778  C 09139 09340
1743                 BE     ITBAND        GO IF YES                                  7  04789  J 04804 S
1744                 B      ERROR         GO TO ERROR ROUTINE                        7  04796  J 01659
1745                 H                                                               1  04803  .
1746      *ERROR HALT-A TABLE LOOKUP INSTRUCTION WITH AN X D
1747      *MODIFIER FAILED TO CAUSE AN INSTRUCTION CHECK.
1748      *SCOPE LOOP POINT-18.14.08 4E,11D2C21E
1749      ITBAND     BNQ    ITR1                                                     7  04804  J 08719 Q
1750                 BCE    ITBARP,TAD1,1                                           12  04811  B 04735 01001 1
```

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PGLIN    LABEL     OPCOD  OPERAND                                             CT  ADDRS  INSTRUCTION

1752     ***********************************************************************
1753     *$CHECK INSTRUCTION CHECK ALARM CIRCUITRY VIA B BIT IN D MODIFIER
1754     *$CF TABLE LCOKUP.
1755               B      SETUPA       GO TO CLOSED SUBROUTINES             7  04823  J 01403
1756               CW     ITBBST&1     SET FOR RESET-RESTART                6  04830  ⌑ 04868
1757               SAR    20                                                7  04836  G 00020 A
1758     *    ***************************************************
1759     ITBBRP    MLNA   XATES,XBAR   AAR-BAR STORAGE TO BS*   12.12.43   12  04843  D 09215 09139 /
1760          *    DCW    @T@        ***CAUSE INSTRUCTION CHK*   4G-R        1  04855
1761          *    DC     XTBLA                             *               5  04860  09234
1762          *    DC     XTBLB                             *               5  04865  09235
1763          *    DC     @P@                               *               1  04866
1764     ITBBST    BNQ    ITR1                              *               7  04867  J 08719 Q
1765          *    BCE    ITBBRP,COMTAD,C  TAD0&1-1,TAD2-NOT1*                12  04874  B 04843 01119 C
1766     *    ***************************************************
1767               C      XBAR,&XTBLB  CORRECT RST-RSTRT OCCUR             11  04886  C 09139 09340
1768               BE     ITBBND       GO IF YES                            7  04897  J 04912 S
1769               B      ERROR        GO TO ERROR ROUTINE                  7  04904  J 01659
1770               H                                                        1  04911  .
1771     *ERRCR HALT-A TABLE LOOKUP INSTRUCTION,WITH A P FOR
1772     *THE D MCCIFIER, FAILED TO CAUSE AN INSTRUCTION CHECK.
1773     *SCOPE LCOP POINT-12.12.43 4G,11C1A06D
1774     ITBBND    BNQ    ITR1                                              7  04912  J 08719 Q
1775               BCE    ITBBRP,TAD1,1                                    12  04919  B 04843 01001 1
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PGLIN    LABEL     OPCOD  OPERAND                                                  CT  ADDRS  INSTRUCTION

1777     ***********************************************************************
1778     *$CHECK INSTRUCTION CHECK ALARM CIRCUITRY VIA AN 8 BIT IN THE D
1779     *$MODIFIER OF OF TABLE LOOKUP.
1780               B      SETUPA        GO TO CLOSED SUBROUTINES                    7  04931  J 01403
1781               CW     ITBCST&1      SET FOR RESET-RESTART                       6  04938  □ 04976
1782               SAR    20                                                        7  04944  G 00020 A
1783     *    ********************************************
1784     ITBCRP    MLNA   XATES,XBAR    AAR-BAR STORAGE TO 8S*   12.12.43          12  04951  D 09215 09139 /
1785         *     DCW    @T@        ***CAUSE INSTRUCTION CHK*   4G-P               1  04963
1786         *     DC     XTBLA                                  *                  5  04968  09234
1787         *     DC     XTBLB                                  *                  5  04973  09235
1788         *     DC     @M@                                    *                  1  04974
1789     ITBCST    BNQ    ITR1                                   *                  7  04975  J 08719 Q
1790         *     BCE    ITBCRP,CCMTAC,C  TADC&1-1,TAD2-NOT1*                     12  04982  B 04951 01119 C
1791     *    ********************************************
1792               C      XBAR,&XTBLB   CORRECT RST-RSTRT OCCUR                    11  04994  C 09139 09340
1793               BE     ITBCNO        GO IF YES                                   7  05005  J 05020 S
1794               B      ERROR         GO TO ERROR ROUTINE                         7  05012  J 01659
1795               H                                                                1  05019  .
1796     *ERROR HALT-A TABLE LOOKUP INSTRUCTION,WITH A   FOR
1797     *THE D MODIFIER, FAILED TO CAUSE AN INSTRUCTION CHECK.
1798     *SCOPE LOOP POINT-12.12.43 4G,11C1A06D
1799     ITBCNO    BNQ    ITR1                                                      7  05020  J 08719 Q
1800               BCE    ITBCRP,TAD1,1                                            12  05027  B 04951 01001 1
```

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                      1410 ALARM PROGRAM                                                     C022         PAGE  4B
PGLIN    LABEL        OPCOD  OPERAND                                               CT  ADORS  INSTRUCTION

18C2     ******************************************************************
18C3     *$CHECK INSTRUCTION CHECK ALARM DUE TO OVERLAPPED SCAN OPERATION
18C4     *$ON THE 1311 IF A 1311 AND OVERLAP IS AVAILABLE ON CHANNEL ONE.
18C5                  BCE    IFLEAA,CHN1&22,R  GO IF IMPAC PRESENT                 12  05039  B 0505B 01311 R
18C6                  B      IFLENO&19         SKIP ROUTINE                         7  05051  J 05312
18C7     IFLEAA       BCE    IFLEAB,SYS1&7,1   GO IF OVERLAP PRESENT               12  0505B  B 05077 01263 1
18C8                  B      IFLEND&19         SKIP ROUTINE                         7  05070  J 05312
18C9     IFLEAB       BCE    IFLEAC,CHN1&25,1  GO IF SCAN FEATURE                  12  05077  B 05096 01314 1
1810                  B      IFLENO&19         SKIP ROUTINE                         7  050B9  J 05312
1811     IFLEAC       B      SETUPA        GO TO CLOSED SUBROUTINES                 7  05096  J 01403
1812                  CW     IFLEST&1      SET FOR RESET-RESTART                    6  05103  □ 0520B
1813                  SAR    20                                                     7  05109  G 00020 A
1814                  MLCWS  @N@,8         NOP SBR INSTRUCTION                     12  05116  D 09306 0000B 7
1815     IFLEAD       MLCS   @0@,XIFLA     SET DRIVE SELECT TO 0                   12  0512B  O 09341 09271 3
1816     *     ********************************************
1817     IFLERP       MLNA   XATES,XBAR    AAR-BAR STORAGE TO 8S*    13.74.05      12  05140  O 09215 09139 /
1818          *       SC     1,XIFLA       SEEK                 *    3A 4A         10  05152  M %F0 09271 R
1819          *       BCB1   *-16                               *                   7  05162  R 05152 2
1820          *       BNR1   CHDRIV        THIS DRIVE NOT READY *                   7  05169  R 0B788 1
                                                                                                        G
1821          *       BA1    *&1                                *                   7  05176  R 051B3 M
1822     IFLEZX       MU     @F7,XIFLA,W  ***CAUSE INSTRUCT CHK *                  10  05183  M @F7 09271 W
1823          *       BCB1   *-16                               *                   7  05193  R 051B3 2
1824          *       BNR1   IFLEER        ERROR-NOT READY      *                   7  05200  R 05266 1
                                                                                                        G
1825     IFLEST       BA1    *&1                                *                   7  05207  R 05214 M
1826          *       BNQ    ITR1                               *                   7  05214  J 0B719 Q
1827          *       BCE    IFLERP,COMTAD,C  TADO&1-1,TAD2-NOT1*                  12  05221  B 05140 01119 C
1828     *     ********************************************
1829                  C      XAAR,&IFLEZX  CORRECT RST-RSTRT OCCUR                 11  05233  C 09134 09346
1830                  BE     IFLEND        GO IF YES                                7  05244  J 05293 S
1831                  B      ERROR         GO TO ERROR ROUTINE                      7  05251  J 01659
1832                  H                    ERROR HALT                               1  0525B  .
1833     *ERROR HALT-AN OVERLAPPED CHAN ONE SCAN INSTRUCTION ON
1834     *YOUR 1311 FAILED TO CAUSE AN INSTRUCTION CHECK ALARM.
1835     *SCOPE LOOP POINT-13.74.05 3A,1102E21C
1836                  B      IFLEND        GO END ROUTINE                           7  05259  J 05293
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PGLIN    LABEL    OPCOD  OPERAND                                              CT  ADDRS  INSTRUCTION

1838     IFLEER   8      ERRCR          GO TO ERROR ROUTINE                    7  05266  J 01659
1839              H                     ERROR HALT                             1  05273  .
1840     *ERRCR FALT-OPERATOR ERROR-NC 1311 DRIVE IS READY ON
1841     *CHANNEL CNE.SKIPPING THIS RCUTINE THIS PASS.
1842              BNQ    ITR1                                                  7  05274  J 08719 Q
1843              8CE    IFLEAD,TAD1,1                                        12  05281  B 05128 01001 1
1844     IFLEND   BNQ    ITR1                                                  7  05293  J 08719 Q
1845              8CE    IFLERP,TAD1,1                                        12  05300  B 05140 01001 1
1846     ***************************************************************
1847     *$CHECK INSTRUCTION CHECK ALARM DUE TO OVERLAPPED SCAN OPERATION
1848     *$ON THE 1311 IF A 1311 AND CVERLAP IS AVAILABLE ON CHANNEL TWO.
1849              BCE    IFLFAA,CHN2&22,R  GO IF IMPAC PRESENT                12  05312  B 05331 01368 R
1850              8      IFLFND&19         SKIP ROUTINE                        7  05324  J 05585
1851     IFLFAA   8CE    IFLFAB,SYS1&7,1   GO IF OVERLAP PRESENT              12  05331  B 05350 01263 1
1852              8      IFLFND&19         SKIP ROUTINE                        7  05343  J 05585
1853     IFLFAB   8CE    IFLFAC,CHN2&25,1  GO IF SCAN FEATURE                 12  05350  B 05369 01371 1
1854              8      IFLFND&19         SKIP ROUTINE                        7  05362  J 05585
1855     IFLFAC   8      SETUPA         GO TO CLOSED SUBROUTINES               7  05369  J 01403
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PGLIN   LABEL     OPCOD  OPERAND                                                   CT  ADDRS  INSTRUCTION

1857              CW     IFLFST&1      SET FOR RESET-RESTART                        6  05376  ¤ 05481
1858              SAR    20                                                         7  05382  G 00020 A
1859              MLCWS  @N@,8         NOP SBR INSTRUCTION                         12  05389  D 09306 00008 7
1860    IFLFAD    MLCS   @0@,XIFLA     SET DRIVE SELECT TO 0                       12  05401  D 09341 09271 3
1861    *    ********************************************
1862    IFLFRP    MLNA   XATES,XBAR    AAR-BAR STORAGE TO 8S*   13.74.05           12  05413  D 09215 09139 /
1863       *      SC     2,XIFLA       SEEK                 *   3A 4B              10  05425  M ¤F0 09271 R
1864       *      BCB2   *-16                               *                       7  05435  X 05425 2
1865       *      8NR2   CHCRIV        THIS DRIVE NOT READY *                       7  05442  X 08788 1
                                                                                                       G
1866       *      8A2    *&1                                *                       7  05449  X 05456 M
1867    IFLFZX    MU     *F7,XIFLA,W  ***CAUSE INSTRUCT CHK *                      10  05456  M *F7 09271 W
1868       *      BC82   *-16                               *                       7  05466  X 05456 2
1869       *      BNR2   IFLFER        ERROR-NOT READY      *                       7  05473  X 05539 1
                                                                                                       G
1870    IFLFST    8A2    *&1                                *                       7  05480  X 05487 M
1871       *      8NQ    ITR1                               *                       7  05487  J 08719 Q
1872       *      BCE    IFLFRP,COMTAD,C  TAD0&1-1,TAD2-NOT1*                      12  05494  8 05413 01119 C
1873    *    ********************************************
1874              C      XAAR,&IFLFZX  CORRECT RST-RSTRT OCCUR                     11  05506  C 09134 09351
1875              BE     IFLFND        GO IF YES                                    7  05517  J 05566 S
1876              8      ERROR         GO TO ERROR ROUTINE                          7  05524  J 01659
1877              H                    ERROR HALT                                   1  05531  .
1878    *ERROR HALT-AN OVERLAPPED CHAN TWO SCAN INSTRUCTION ON
1879    *YOUR 1311 FAILED TO CAUSE AN INSTRUCTION CHECK ALARM.
1880    *SCOPE LOOP POINT-13.74.05 3A,11D2E21C
1881              8      IFLFND        GO END ROUTINE                               7  05532  J 05566
1882    IFLFER    B      ERROR         GO TO ERROR ROUTINE                          7  05539  J 01659
1883              H                    ERROR HALT                                   1  05546  .
1884    *ERROR HALT-OPERATOR ERROR-NO 1311 DRIVE IS READY ON
1885    *CHANNEL TWO.SKIPPING THIS ROUTINE THIS PASS.
1886              8NQ    ITR1                                                       7  05547  J 08719 Q
1887              8CE    IFLFAD,TAD1,1                                             12  05554  B 05401 01001 1
1888    IFLFND    BNQ    ITR1                                                       7  05566  J 08719 Q
1889              BCE    IFLFRP,TAD1,1                                             12  05573  B 05413 01001 1
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PGLIN     LABEL     OPCOD  OPERAND                                                    CT  ADDRS  INSTRUCTION

1891      ***********************************************************************
1892      *$CHECK ABILITY OF THE B CHANNEL VALIDITY CHECK ALARM TO CAUSE A
1893      *$MASTER ERROR.
1894                B      SETUPA        GO TO CLOSED SUBROUTINES                  7  05585  J 01403
1895      *    **************************************************
1896      BCHNRP    B      CLINVD        GO SET INVLD CHARAC  *   18.14.08          7  05592  J 01808
1897          *     CW     BCHNST&1      SET FOR RESET RESTART*   4F-K              6  05599  ¤ 05637
1898          *     SAR    20                                 *                     7  05605  G 00020 A
1899          *     MLNA   XATES,XBAR    AAR-BAR STORAGE TO BS*                    12  05612  D 09215 09139 /
1900          *     MLCWA  @9999@,112  ***CAUSE B CHNL VC     *                    12  05624  O 09331 00112 X
1901      BCHNST    BNQ    ITR1                               *                     7  05636  J 08719 Q
1902          *     BCE    BCHNRP,COMTAD,C  TAD0&1-1,TAD2-NOT1*                    12  05643  B 05592 01119 C
1903      *    **************************************************
1904                C      XBAR,@00105@  CORRECT RST-RSTRT OCCUR                  11  05655  C 09139 09356
1905                BE     BCHNNO        GO IF YES                                 7  05666  J 05681 S
1906                B      ERROR         GO TO ERROR ROUTINE                       7  05673  J 01659
1907                H                                                              1  05680  .
1908      *ERROR HALT-B CHANNEL VALIDITY CHECK FAILS TO CAUSE A
1909      *MASTER ERROR.
1910      *SCOPE LOOP POINT-18.14.08 4F,1102D22G
1911      BCHNNO    BNQ    ITR1                                                    7  05681  J 08719 Q
1912                BCE    BCHNRP,TA01,1                                          12  05688  B 05592 01001 1
1913                B      CLEARC        CLEAR INVALID CHARACTER                   7  05700  J 01877
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PGLIN     LABEL      OPCOD  OPERAND                                                  CT  ADDRS   INSTRUCTION

1915      *******************************************************************
1916      *$CHECK RBC INTERLOCK ALARM IF SYSTEM HAS A 1405 ON CHANNEL CNE.
1917                 SW     XFILEA        SET NOT READY INDICATOR                     6  05707   , 09236
1918                 BCE    *&8,CHN1&27,F  CHNL 1 1405 PRESENT                       12  05713   8 05732 01316 F
1919                 B      R8CEND&19     NO                                          7  05725   J 05989
1920                 8      SETUPA        GO TO CLOSED SUBRCUTINES                    7  05732   J 01403
1921                 CW     R8CEST&1      SET FOR RESET-RESTART                       6  05739   □ 05867
1922                 SAR    20                                                        7  05745   G 00020 A
1923                 MLCWS  @N@,8         NOP SBR INSTRUCTION                        12  05752   D 09306 00008 7
1924      R8CECK     SD     1,XFILE       SEEK                                       10  05764   M %F0 09249 R
1925                 BC81   RBCECK        GO IF 8USY                                  7  05774   R 05764 2
                                                                                                         G
1926                 8A1    RBCEER        GO-ERRCR-CANNOT SEEK OK                     7  05781   R 05943 M
                                                                                                               D
1927                 MRCWG  XFILE,WRT8CT  STORE FOR WRITING                          12  05788   D 09249 09691 L
1928      *    **************************************************
1929      R8CERP     MLNA   XATES,XBAR    AAR-8AR STORAGE TO 8S*                     12  05800   D 09215 09139 /
1930           *     SW     XFILEA        SET NOT READY INDCATE*                      6  05812   , 09236
                                                                                                         G
1931           *     8A1    *&1                                 *                     7  05818   R 05825 M
1932           *     WC     1,WRT8OT      WRITE ON CE TRACK     *  18.14.08          10  05825   M %F1 09691 W
1933           *     BC81   *-16                                *  4E-E               7  05835   R 05825 2
                                                                                                         G
1934           *     8A1    *&1                                 *  13.74.02           7  05842   R 05849 M
1935      R8CERB     WC     1,WRT8DT   ***CAUSE RBC INTERLOCK   *  4A 4B 5C          10  05849   M %F1 09691 W
1936           *     8C81   *-16          GO IF BUSY            *  13.72.03           7  05859   R 05849 2
                                                                                                         G
1937      RBCEST     8A1    *&7           GO ON ANY IO STATUS   *  1E                 7  05866   R 05879 M
1938           *     CW     XFILEA        CLR E 1405 NT RDY IND*                      6  05873   □ 09236
1939           *     8NQ    ITR1                                *                     7  05879   J 08719 Q
1940           *     BCE    RBCERP,COMTAC,C  TAD0&1-1,TAD2-NOT1*                     12  05886   8 05800 01119 C
1941      *    **************************************************
1942                 C      XAAR,&RBCERB  CORRECT RST-RSTRT OCCUR                    11  05898   C 09134 09361
1943                 BE     RBCEND        GO IF YES                                   7  05909   J 05970 S
1944                 8W     RBCEER,XFILEA  GO-E 1405 NOT READY                       12  05916   V 05943 09236 1
1945                 8      ERROR         GO TO ERROR ROUTINE                         7  05928   J 01659
1946                 H                    ERROR HALT                                  1  05935   .
1947      *ERRCR HALT-TWO SUCCESSIVE WRITE DISK INSTRUCTIONS ON
1948      *YOUR CHANNEL ONE 14C5 FAILEC TO CAUSE AN R8C
1949      *INTERLOCK ALARM.
1950      *SCOPE LOOP POINT-18.14.08 4E,11D2C21E
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                   1410 ALARM PROGRAM                                                              C022         PAGE  53
PGLIN     LABEL    OPCOD  OPERAND                                                    CT  ADDRS  INSTRUCTION

1952               B      RBCEND                                                      7  05936  J 05970
1953      RBCEER   B      ERROR          GO TO ERROR ROUTINE                          7  05943  J 01659
1954               H                     ERROR HALT                                   1  05950  .
1955      *ERROR HALT-UNABLE TO SEEK AND/OR WRITE ON THE CE
1956      *TRACK OF YOUR CHANNEL ONE 1405 MOD 0,ACCESS 0,DUE TO
1957      *AN IO STATUS INDICATOR COMING ON.ROUTINE SKIPPED.
1958               BNQ    ITR1                                                        7  05951  J 08719 Q
1959               BCE    RBCECK,TAD1,1                                              12  05958  B 05764 01001 1
1960      RBCEND   BNQ    ITR1                                                        7  05970  J 08719 Q
1961               BCE    RBCERP,TAD1,1                                              12  05977  B 05800 01001 1
1962      ***********************************************************************
1963      *$CHECK RBC INTERLOCK ALARM IF SYSTEM HAS A 1405 ON CHANNEL TWO.
1964               SW     XFILFA         SET NOT READY INDICATRO                      6  05989  , 09237
1965               BCE    *&8,CHN2&27,F  CHNL 2 1405 PRESENT                         12  05995  B 06014 01373 F
1966               B      RBCFNO&19      NO                                           7  06007  J 06271
1967               B      SETUPA         GO TO CLOSED SUBROUTINES                     7  06014  J 01403
1968               CW     RBCFST&1       SET FOR RESET-RESTART                        6  06021  □ 06149
1969               SAR    20                                                          7  06027  G 00020 A
1970               MLCWS  @N@,8          NOP SBR INSTRUCTION                         12  06034  D 09306 00008 7
1971      RBCFCK   SD     2,XFILF        SEEK                                        10  06046  M □F0 09260 R
1972               BCB2   *-16           GO IF BUSY                                   7  06056  X 06046 2
                                                                                                         G
1973               BA2    RBCFER         GO-ERROR-CANNOT SEEK OK                      7  06063  X 06225 M
                                                                                                               D
1974               MRCWG  XFILF,WRTBCT   STORE FOR WRITING                           12  06070  D 09260 09691 L
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PGLIN     LABEL     OPCOD  OPERAND                                                     CT  ADDRS  INSTRUCTION

1976      *         ***********************************************
1977      RBCFRP    MLNA   XATES,XBAR     AAR-BAR STORAGE TO BS*                       12  06082  D 09215 09139 /
1978          *     SW     XFILFA         SET NOT READY INDCATE*                        6  06094  , 09237
                                                                                                              G
1979          *     BA2    *&1                                 *                        7  06100  X 06107 M
1980          *     WD     2,WRTBOT       WRITE ON CE TRACK    *    18.14.08           10  06107  M ¤F1 09691 W
1981          *     BCB2   *-16           GO IF BUSY           *    4E-E                7  06117  X 06107 2
                                                                                                              G
1982          *     BA2    *&1                                 *    13.74.02            7  06124  X 06131 M
1983      RBCFRB    WD     2,WRTBOT    ***CAUSE RBC INTERLOCK  *    4A 4B 5C           10  06131  M ¤F1 09691 W
1984          *     BCB2   *-16           GO IF BUSY           *    13.73.03            7  06141  X 06131 2
                                                                                                              G
1985      RBCFST    BA2    *&7            GO ON ANY IO STATUS  *    5G                  7  06148  X 06161 M
1986          *     CW     XFILFA         CLR F 1405 NT RDY IND*                        6  06155  ¤ 09237
1987          *     BNQ    ITR1                                *                        7  06161  J 08719 Q
1988          *     BCE    RBCFRP,CCMTAD,C  TAD0&1-1,TAD2-NOT1*                        12  06168  B 06082 01119 C
1989      *         ***********************************************
1990                C      XAAR,&RBCFRB                                                11  06180  C 09134 09366
1991                BE     RBCFND         GO IF YES                                     7  06191  J 06252 S
1992                BW     RBCFER,XFILFA  GO-F 1405 NOT READY                          12  06198  V 06225 09237 1
1993                B      ERROR          GO TO ERROR ROUTINE                           7  06210  J 01659
1994                H                     ERROR HALT                                    1  06217  .
1995      *ERRCR HALT-TWO SUCCESSIVE WRITE DISK INSTRUCTIONS ON
1996      *YOUR CHANNEL TWC 14C5 FAILED TO CAUSE AN RBC
1997      *INTERLOCK ALARM.
1998      *SCOPE LCCP POINT-18.14.CB 4E,11D2C21E
1999                B      RBCFND                                                       7  06218  J 06252
20C0      RBCFER    B      ERROR          GO TO ERROR ROUTINE                           7  06225  J 01659
20C1                H                     ERROR HALT                                    1  06232  .
2002      *ERRCR HALT-UNABLE TC SEEK AND/OR WRITE ON THE CE
2003      *TRACK OF YOUR CHANNEL TWO 14C5 MOD 0,ACCESS 0,DUE TO
2004      *AN IO STATUS INDICATOR COMING ON.ROUTINE SKIPPED.
20C5                BNQ    ITR1                                                         7  06233  J 08719 Q
2006                BCE    RBCFCK,TAD1,1                                               12  06240  B 06046 01001 1
2007      RBCFND    BNQ    ITR1                                                         7  06252  J 08719 Q
20C8                BCE    RBCFRP,TAD1,1                                               12  06259  B 06082 01001 1
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PGLIN    LABEL     OPCOD  OPERAND                                           CT  ADDRS  INSTRUCTION

2010     ***********************************************************************
2011     *$BRANCH BACK FROM HERE IF TAD5 IS A ONE.
2012               BCE    RSETBB,TAD5,1 REPEAT RST-RSTRT SECTION            12  06271  B 02888 01005 1
2013     ***********************************************************************
2014$    *$CHECK IO INTERLOCK CHECK ALARM INDICATOR.
2015     MILKIN    B      NORMAL         TO CLOSED SUB ROUTINES              7  06283  J 01732
2016               CW     MILKND&1       SET FOR RESET-RESTART               6  06290  ¤ 06394
2017               SAR    6                                                  7  06296  G 00006 A
2018               B      TYP1                                               7  06303  J 01120
2019               DCW    @ IO INTRLK ALARM.@,G                             17  06326
2020               B      TYP1                                               7  06328  J 01120
2021               DCW    @  OFF-ERR @                                      10  06344
2022               DC     MILKER                                             5  06349  06392
                           G
2023               CCW    @M@                                                1  06350
2024               B      SPTYPA         ON-OK,COMP RESET,START TP           7  06351  J 08836
2025     *    ********************************************
                                                                                             G
2026     MILKRP    BA1    *&1                          *                     7  06358  R 06365 M
2027          *    BNQ    ITR1                         *                     7  06365  J 08719 Q
2028          *    RCP    XSPACE                       *                    10  06372  M %TO 09204 R
2029          *    RCP    XSPACE         CAUSE IO INTRLK ALRM *             10  06382  M %TO 09204 R
2030     *    ********************************************
2031     MILKER    H                     DUMMY ERROR HALT                    1  06392  .
2032     *ERROR-IC INTERLOCK CHECK ALARM INDICATOR SHOULD NOW
2033     *BE CN.NC SCOPE LOOP PROVIDED FOR THIS ERROR.
2034     *STATIC SCOPE POINT-18.14.11 2I,11D2K25C
                                                                                             G
2035     MILKNC    BA1    *&1                                                7  06393  R 06400 M
2036               BNQ    ITR1                                               7  06400  J 08719 Q
2037               BCE    MILKRP,TAD1,1                                     12  06407  B 06358 01001 1
```

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PGLIN     LABEL      OPCODE  OPERAND                                                    CT  ADDRS  INSTRUCTION

2039      ****************************************************************************
2040      *$CHECK ADDRESS CHECK ALARM INDICATOR.
2041                 B       NORMAL          GO TO CLOSED SUBROUTINES                    7  06419  J 01732
2042                 CW      MADCNO&1        SET FOR RESET-RESTART                       6  06426  ¤ 06510
2043                 SAR     6                                                           7  06432  G 00006 A
2044                 B       TYP1                                                        7  06439  J 01120
2045                 DCW     a ADDRESS CHK ALARM.a,G                                    19  06464
2046                 B       TYP1                                                        7  06466  J 01120
2047                 DCW     a  OFF-ERR a                                               10  06482
2048                 DC      MADCER                                                      5  06487  06508
                               G
2049                 DCW     aMa                                                         1  06488
2050                 B       SPTYPA          ON-OK,COMP RESET,START TP                   7  06489  J 08836
2051      *    ***************************************************
2052      MADCRP     SCNLS   5          ***CAUSE ADDRESS CHECK  *   18.14.11              6  06496  D 00005
                                  Q
2053          *      DC      aDC05M a                         *   1C 2C                 6  06507
2054      *    ***************************************************
2055      MADCER     H                       DUMMY ERROR HALT                            1  06508  .
2056      *ERROR-ADDRESS CHECK ALARM INDICATOR SHOULD NOW BE ON.
2057      *NO SCOPE LOOP PROVIDED FOR THIS ERROR.
2058      *STATIC SCOP POINT-18.14.11 2C,1102K25A
2059      MADCNO     BNQ     ITR1                                                        7  06509  J 08719 Q
2060                 BCE     MADCRP,TA01,1                                              12  06516  B 06496 01001 1
2061      ****************************************************************************
2062      *$CHECK RBC INTERLOCK ALARM INDICATOR IF ONE OF THE PREVIOUS 1405
2063      *$ROUTINES HAS BEEN RUN.
2064                 BW      RBCIAA,XFILEA   GO-NO E 1405 READY                         12  06528  V 06583 09236 1
2065                 MLCS    a%a,RBCIRP&1    SET UP FOR E 1405                          12  06540  D 09367 06744 3
2066                 MLCS    aRa,RBCIAC                                                 12  06552  D 09305 06753 3
                                                                                                                0
2067                 MRCWG   XFILE,WRTBOT                                               12  06564  D 09249 09691 L
2068                 B       RBCIAB                                                      7  06576  J 06631
2069      RBCIAA     BW      RBCIND&19,XFILFA  GO-NO 1405 READY                         12  06583  V 06828 09237 1
2070                 MLCS    a¤a,RBCIRP&1    SET UP FOR F 1405                          12  06595  D 09368 06744 3
2071                 MLCS    aXa,RBCIAC                                                 12  06607  D 09369 06753 3
                                                                                                                0
2072                 MRCWG   XFILF,WRTBOT                                               12  06619  D 09260 09691 L
```

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PGLIN     LABEL       OPCOD  OPERAND                                              CT  ADDRS  INSTRUCTION

2074      RBCIAB      B      NORMAL         GO TO CLOSED SUBROUTINES               7  06631  J 01732
2075                  CW     RBCIND&1       SET FOR RESET-RESTART                  6  06638  ¤ 06810
2076                  SAR    6                                                     7  06644  G 00006 A
2077                  B      TYP1                                                  7  06651  J 01120
2078                  DCW    @ RBC INTRLK ALARM.@.G                               18  06675
2079                  B      TYP1                                                  7  06677  J 01120
2080                  DCW    @  OFF-ERR @                                         10  06693
2081                  DCW    RBCIER                                                5  06698  06784
                              G
2082                  DCW    @M@                                                   1  06699
2083                  B      SPTYPA        ON-OK,COMP RESET,START TP               7  06700  J 08836
2084                  MLCS   RBCIAC,RBCIAD                                        12  06707  D 06753 06760 3
2085                  MLCS   RBCIRP&1,RBCIAE&1                                    12  06719  D 06744 06768 3
2086                  MRN    RBCIRP&5,RBCIAE&5                                    12  06731  D 06748 06772 9
2087      *     ***************************************************
2088      RBCIRP      WC     1,WRTBOT       WRT ON CE TRACK        *   13.74.02   10  06743  M %F1 09691 W
2089      RBCIAC      BCB1   *-16           GO IF BUSY             *   1B 2B       7  06753  R 06743 2
                                                                                                     G
2090      RBCIAD      BA1    *&1                                   *               7  06760  R 06767 M
2091      RBCIAE      WC     1,WRTBOT     ***CAUSE RBC INTER LOCK  *              10  06767  M %F1 09691 W
2092            *     BCB1   *-16                                  *               7  06777  R 06767 2
2093      *     ***************************************************
2094      RBCIER      H      RBCIRP                                                6  06784  . 06743
2095      *ERRCR-THE RBC INTERLOCK ALARM INDICATOR SHOULD NOW
2096      *BE ON.
2097      *STATIC SCOPE POINT-13.74.02 2B.11D2D07K
2098      RBCIST      MLCS   RBCIAC,*&1                                           12  06790  D 06753 06802 3
                                                                                                     G
2099                  BA1    *&1                                                   7  06802  R 06809 M
2100      RBCIND      BNQ    ITR1                                                  7  06809  J 08719 Q
2101                  BCE    RBCIRP,TAD1,1                                        12  06816  B 06743 01001 1
```

```
PGLIN     LABEL      OPCOD  OPERAND                                                    CT ADDRS  INSTRUCTION

2103      *******************************************************************
2104      *$CHECK INSTRUCTION CHECK ALARM VIA CYCLE CHECK ERROR DUE TO NO
2105      *$CYCLE CONTROL LATCH BEING ON CAUSED BY ILLEGAL INSTRUCTION LENGTH
2106                 B      NORMAL        TO CLOSED SUBROUTINES                        7 06828  J 01732
2107                 CW     MIINND&1      SET FOR RESET-RESTART                        6 06835  ¤ 06960
2108                 SAR    6                                                          7 06841  G 00006 A
2109                 B      TYP1                                                       7 06848  J 01120
2110                 DCW    @ INSTRUCT CHK ALARM.@,G                                  20 06874
2111                 B      TYP1                                                       7 06876  J 01120
2112                 DCW    @  NOT ON ALONE-ERR @                                     19 06901
2113                 DC     MIINER                                                     5 06906  06953
                             G
2114                 DCW    @M@                                                        1 06907
2115                 B      TYP1                                                       7 06908  J 01120
2116                 DCW    @  ON ALONE-CK,RESET,START@,G                             25 06939
2117      *    *************************************************18.14.11
2118      MIINRP     SW     09999      ***CAUSE INSTRUCTION CHK*       1I 2I           6 06941  , 09999
2119           *     DC     @099959@      VIA LONG SW          *      12.12.43         6 06952
2120      *    *************************************************1G-F
2121      MIINER     H      MIINRP                                    12.12.46         6 06953  . 06941
2122      *ERROR-IF INSTRUCTION CHECK ALARM IS NOT ON-INDICATOR 1G 1E 2D 3B
2123      *      FAILURE.                                       4B 4C 4F
2124      *STATIC SCOPE POINT-18.14.11 2I,11D2K25C
2125      *ERROR-IF ADDITIONAL ALARMS ARE ON WITH THE
2126      *      INSTRUCTION CHECK ALARM-CYCLE CHECK ERROR
2127      *      CIRCUIT FAILURE.
2128      *SCOPE LOOP POINT-12.12.43 1G,11C1A06C
2129      MIINND     BNQ    ITR1                                                       7 06959  J 08719 Q
2130                 BCE    MIINRP,TAD1,1                                             12 06966  B 06941 01001 1
```

```
PGLIN     LABEL      OPCOD  OPERAND                                                      CT  ADDRS  INSTRUCTION

2132      ************************************************************************
2133      *$CHECK THE ABILITY OF AN CP REGISTER SET CHECK ALARM
2134      *$TO CAUSE A MASTER ERROR.
2135                 B      NORMAL          TO CLOSED SUBROUTINES                     7  06978  J 01732
2136                 CW     MORSND&1        SET FOR RESET-RESTART                     6  06985  □ 07097
2137                 SAR    6                                                         7  06991  G 00006 A
2138                 B      TYP1                                                      7  06998  J 01120
2139                 DCW    @ CP REG SET ALARM.@,G                                   18  07022
2140                 B      TYP1                                                      7  07024  J 01120
2141                 DCW    @  NOT ON ALONE-ERR @                                    19  07049
2142                 DC     MORSER                                                    5  07054  07095
                              G
2143                 DCW    @M@                                                       1  07055
2144                 B      TYP1                                                      7  07056  J 01120
2145                 DCW    @  ON ALONE-OK,RESET,START@,G                            25  07087
2146      *    ********************************************18.14.08
2147      MORSRP     DCW    @ 00005@   ***CAUSE CP REG SET CHK *      4G-F            6  07094
2148      *    ********************************************
2149      MORSER     H                                                                1  07095  .
2150      *ERROR-ONLY THE CP REG SET CHECK ALARM SHOULD BE ON.
2151      *FAILURE IF IT IS NOT ON OR IF MULTIPLE ALARMS ARE ON.
2152      *TO SCOPE LOOP,PLACE A BRANCH TO LABEL MORSRP-5 AT
2153      *LOCATION 00001,AND USE RESET-RESTART MODE.
2154      *SCOPE LOOP POINT-18.14.08 4G,11D2D22G
2155      MORSND     BNQ    ITR1                                                      7  07096  J 08719 Q
2156                 BCE    MORSRP,TAD1,1                                            12  07103  B 07094 01001 1
```

```
PGLIN     LABEL      OPCOD  DPERAND                                               CT  ADDRS  INSTRUCTION

2158      *****************************************************************
2159      *$AUTO SECTICN ENDED.
2160      AUTNCD     BCE    MANSEC,TAD4,1  GO IF MANUAL REQUESTEC                 12  07115  B 07230 01004 1
2161                 BCE    *&8,TAC3,1                                            12  07127  B 07146 01003 1
2162                 B      ODCFCL         GD TURN 1405 SWITCHES OFF               7  07139  J 09045
2163                 BCE    AUTNAA,TAD0,1                                         12  07146  B 07179 01000 1
2164                 B      TYP1                                                   7  07158  J 01120
2165                 CCW    @ENC C022 AUTO@,G                                     13  07177
2166      AUTNAA     BCE    RSTDAA,TAD3,1 REPEAT ALL BUT NRML SECT                12  07179  B 02611 01003 1
                                                                                                             D
2167                 MRCWG  XSTRTC,1       SET TO RESET & START PROG              12  07191  D 09176 00001 L
2168                 CW     START&1                                                6  07203  ¤ 02001
2169                 SAR    6                                                      7  07209  G 00006 A
2170                 B      ODCFCL         GO TURN 1405 SWITCHES CFF               7  07216  J 09045
2171                 B      LOAD                                                   7  07223  J 00400
2172      MANSEC     NCP                                                           1  07230  N
2173      *****************************************************************
2174      *$MANUAL INTERVENTION ROUTINE-CHECK THE ABILITY OF THE A CHANNEL
2175      *$VALICITY CHECK ALARM TO CALSE A MASTER ERROR
2176                 B      SETUPA         GO TO CLOSED SUBRDUTINES                7  07231  J 01403
2177                 B      TYP1           18.14.08 4F                             7  07238  J 01120
2178                 CCW    @ GRND 11D2C22K@    PREVENT B CHNL VC                 14  07258
2179                 DC     @&START@,G                                             6  07264
2180                 H                     WAIT FOR GROUND                         1  07266  .
2181      MAVCEX     B      CLINVD         SET INVLD CHAR AT 00110                 7  07267  J 01808
2182                 CW     MAVCER&1       SET FOR RESET RESTART                   6  07274  ¤ 07396
2183                 SAR    20                                                     7  07280  G 00020 A
2184                 MLCWA  @9999@,112     ALARM IF NDT GROUNDEC                  12  07287  D 09331 00112 X
2185                 B      CLINVD         SET INVLD CHAR AT 00110                 7  07299  J 01808
```

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PGLIN    LABEL     OPCOD  OPERAND                                        CT  ADDRS  INSTRUCTION

2187               CW     MAVCST&1                                        6  07306  ⌑ 07344
2188               SAR    20              SET FOR RESET RESTART           7  07312  G 00020 A
2189     *     ************************************************
2190     MAVCRP    MLNA   XATES,XBAR      AAR-BAR STORAGE TO 8S*   18.14.08   12  07319  D 09215 09139 /
                                                                                                 S
2191         *     SCNLA  112,@9999@  ***CAUSE A CHNL VAL CHK*   4F-H       12  07331  0 00112 09331 B
2192     MAVCST    BNQ    ITR1                                  *          7  07343  J 08719 Q
2193         *     BCE    MAVCRP,COMTAD,C  TADD&1-1,TAD2-NOT1*            12  07350  B 07319 01119 C
2194     *     ************************************************
2195               C      XAAR,@00109@  CORRECT RST-RSTRT OCCUR          11  07362  C 09134 09356
2196               BE     MAVCND          GO IF YES                       7  07373  J 07422 S
2197               B      ERROR           GO TO ERROR ROUTINE             7  07380  J 01659
2198               H                                                      1  07387  .
2199     *ERROR HALT-A CHANNEL VALIDITY CHECK FAILS TO CAUSE A
2200     *MASTER ERROR.
2201     *SCOPE LOOP POINT-18.14.08 4F,1102022G
2202               B      MAVCND          GO END ROUTINE                  7  07388  J 07422
2203     MAVCER    B      ERROR           GO TO ERROR ROUTINE             7  07395  J 01659
2204               H                                                      1  07402  .
2205     *ERROR HALT-OPERATOR ERROR-PROPERLY GROUNDING THE
2206     *DESIGNATED POINT WOULD HAVE PREVENTED A B CHANNEL VC
2207     *ERROR.THE B CHNL VC OCCURRED.THE A CHANNEL
2208     *VALIDITY CHECK ALARM CIRCUITRY WAS NOT CHECKED THIS
2209     *PASS.
2210               BNQ    ITR1                                            7  07403  J 08719 Q
2211               BCE    MAVCEX,TAD1,1                                  12  07410  B 07267 01001 1
2212     MAVCND    BNQ    ITR1                                            7  07422  J 08719 Q
2213               BCE    MAVCRP,TAD1,1                                  12  07429  B 07319 01001 1
2214               B      CLEARC          CLEAR INVALID CHARACTER         7  07441  J 01877
2215               B      TYP1                                            7  07448  J 01120
2216               DCW    @ UNGRND&START@,G                              13  07467
2217               H                      WAIT FOR GROUND REMOVAL         1  07469  .
```

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PGLIN     LABEL     OPCOD  OPERAND                                                         CT  ADDRS  INSTRUCTION

2219      *****************************************************************
2220      *$MANUAL INTERVENTION ROUTINE-CHECK THE ABILITY OF THE A REG SET
2221      *$ERROR ALARM TO CAUSE A MASTER ERROR.
2222      MARSAA    B      NORMAL        GO TO CLOSED SUBROUTINES                          7  07470  J 01732
2223                CW     MARSND&1      SET FOR RESET-START                               6  07477  ¤ 07608
2224                SAR    6                                                               7  07483  G 00006 A
2225      MARSAB    B      TYP1          18.14.07 5D                                       7  07490  J 01120
2226                DCW    @ 1.GRND 11D2D26D&START@,G                                     22  07518
2227                B      TYP1                                                            7  07520  J 01120
2228                DCW    @ 2.A REG SET ALARM.@.G                                        19  07545
2229                B      TYP1                                                            7  07547  J 01120
2230                DCW    @   NOT CN ALONE-ERR @                                         20  07573
2231                DC     MARSND                                                          5  07578  07607
                            G
2232                DCW    @M@                                                             1  07579
2233                B      SPTYPB        ON ALONE-OK,UNGRND,RST,ST                         7  07580  J 08882
2234                H                    WAIT FOR GROUND                                   1  07587  .
2235      *    ********************************************
2236      MARSRP    SCNLS  5,5&X1     ***CAUSE A REG SET ERR  *   18.14.08                 12  07588  D 00005 000‡5
2237      MARSST    H      MARSRP                            *   4G-A                      6  07600  . 07588
2238      *    ********************************************
2239      MARSER    H                    DUMMY ERROR HALT                                  1  07606  .
2240      *ERRCR HALT-A REG SET ALARM FAILED TO CAUSE A MASTER
2241      *ERRCR.TC SCOPE LOOP,CHANGE HALT AT LABEL MARSST TO A
2242      *BRANCH TO LABEL MARSRP AND START AT LABEL MARSRP.
2243      *SCOPE LCOP POINT-18.14.08 4G,11D2D22G
2244      MARSND    BNQ    ITR1                                                            7  07607  J 08719 Q
2245                BCE    MARSAB,TAD1,1                                                  12  07614  B 07490 01001 1
```

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PGLIN     LABEL      OPCOD  OPERAND                                                CT  ADDRS  INSTRUCTION

2247      ***********************************************************************
2248      *$MANUAL INTERVENTION ROUTINE-CHECK ABILITY OF THE ADDRESS EXIT
2249      *$ALARM TO CAUSE MASTER ERROR.
2250                 B      NORMAL        GO TO CLOSED SUBROUTINES                  7  07626  J 01732
2251                 CW     MAEXND&1      SET FOR RESET START                       6  07633  ¤ 07764
2252                 SAR    6                                                       7  07639  G 00006 A
2253      MAEXAA     B      TYP1                                                    7  07646  J 01120
2254                 DCW    @ 1.GRND 1102C09B&START@,G                             22  07674
2255                 B      TYP1                                                    7  07676  J 01120
2256                 DCW    @ 2.ADDR EXIT ALARM.@,G                                19  07701
2257                 B      TYP1                                                    7  07703  J 01120
2258                 DCW    @   NOT ON ALONE-ERR @                                 20  07729
2259                 DC     MAEXER                                                  5  07734  07762
                            G
2260                 DCW    @M@                                                     1  07735
2261                 B      SPTYPB        ON ALONE-OK,UNGRND,RST,ST                 7  07736  J 08882
2262                 H                    WAIT FOR GROUND                           1  07743  .
2263      *     ************************************************
2264      MAEXRP     SCNLS  90&X1,5    ***CAUSE ADDR EXIT ALARM*   18.14.08        12  07744  D 00020 00005
2265      MAEXST     H      MAEXRP                             *   4H-Q             6  07756  . 07744
2266      *     ************************************************
2267      MAEXER     H                    DUMMY ERROR HALT                          1  07762  .
2268      *ERROR HALT-ADDRESS EXIT ALARM DID NOT CAUSE A MASTER
2269      *ERROR.TO SCOPE LOOP,CHANGE THE HALT AT LABEL MAEXST
2270      *TO A BRANCH TO LABEL MAEXRP AND START AT MAEXRP.
2271      *SCOPE LOOP POINT-18.14.08 4H,1102C210
2272      MAEXND     BNQ    ITR1                                                    7  07763  J 08719 Q
2273                 BCE    MAEXAA,TAD1,1                                          12  07770  B 07646 01001 1
```

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PGLIN     LABEL     OPCOD  OPERAND                                                      CT  ADDRS  INSTRUCTION

2275      ************************************************************************
2276      *$MANUAL INTERVENTION ROUTINE-CHECK ABILITY OF THE A CHAR SEL ALARM
2277      *$TO CAUSE MASTER ERROR BY GATING THE OP MOD AND A DATA REGS TO THE
2278      *$A CHANNEL AT THE SAME TIME.
2279      MASDAA    B      NORMAL         GO TO CLOSED SUBROUTINES                       7  07782  J 01732
2280                CW     MASCND&1       SET FOR RESET-START                            6  07789  ¤ 07920
2281                SAR    6                                                             7  07795  G 00006 A
2282      MASDAB    B      TYP1           18.14.01 5E                                    7  07802  J 01120
2283                DCW    @ 1.GRND 11D2C07D&START@,G                                   22  07830
2284                B      TYP1                                                          7  07832  J 01120
2285                DCW    @ 2.A CHAR SEL ALARM.@,G                                     20  07858
2286                B      TYP1                                                          7  07860  J 01120
2287                DCW    @   NOT ON ALONE-ERR @                                       20  07886
2288                DC     MASCER                                                        5  07891  07913
                            G
2289                DCW    @M@                                                           1  07892
2290                B      SPTYPB         ON ALONE-OK,UNGRND,RST,ST                      7  07893  J 08882
2291                H                     WAIT FOR GROUND                                1  07900  .
2292      *    ********************************************   18.14.01
2293      MASDRP    SCNLS  MASCRP&11,MASDRP&11  *** A CHAR SEL*   3D-E 3E-R             12  07901  D 07912 07912
2294      *    ********************************************   18.14.08
2295      MASDER    H      MASDRP         ERROR HALT          4I-H                       6  07913  . 07901
2296      *ERROR HALT-GATING THE A DATA AND OP MOD REGS BOTH TO
2297      *THE A CHANNEL CAUSED NO A CHAR SEL ALARM.PROGRAM
2298      *CANNOT BE LOOPED.IF NO ALARMS ARE ON,ERROR MAY BE
2299      *REPEATED BY PRESSING START.
2300      *STATIC SCOPE POINT-18.14.08 4I,11D2C21C
2301      MASCND    BNQ    ITR1                                                          7  07919  J 08719 Q
2302                BCE    MASDAB,TAD1,1                                                12  07926  B 07802 01001 1
```

```
PGLIN     LABEL      OPCOD  OPERAND                                                         CT  ADDRS  INSTRUCTION

2304      ******************************************************************
2305      *$MANUAL INTERVENTION ROUTINE-CHECK A CHAR SEL ALARM WHEN E2 AND A
2306      *$DATA REGS ARE BOTH GATED TO THE A CHANNEL.
2307      MASCAA     B      NORMAL        TO CLOSED SUB ROUTINES                             7  07938  J 01732
2308                 CW     MASCND&1      SET FOR RESET-RESTART                              6  07945  ⌑ 08058
2309                 SAR    6                                                                7  07951  G 00006 A
2310      MASCAB     B      TYP1          18.14.01 5C                                        7  07958  J 01120
2311                 DCW    @ 1.GRND 11D2C04P@,G                                            16  07980
2312                 B      TYP1                                                             7  07982  J 01120
2313                 DCW    @ 2.A CHAR SEL ALARM.@,G                                        20  08008
2314                 B      TYP1                                                             7  08010  J 01120
2315                 DCW    @   NOT ON ALONE-ERR @                                          20  08036
2316                 DC     MASCER                                                           5  08041  08056
                              G
2317                 DCW    @M@                                                              1  08042
2318                 B      SPTYPB        ON ALONE-OK,UNGRND,RST,ST                          7  08043  J 08882
2319      *    ************************************************   18.14.01
2320      MASCRP     H      MASCRP      ***CAUSE A CHAR SEL ALRM*   38-D 3C-R                  6  08050  . 08050
2321      *    ************************************************
2322      MASCER     H                    DUMMY ERROR HALT                                   1  08056  .
2323      *ERROR HALT-GATING THE E2 AND THE A DATA REGS TO THE A
2324      *CHANNEL AT THE SAME TIME CAUSED NO A CHAR SEL ALARM.
2325      *STATIC SCOPE POINT-18.14.01 2C,11D2C03C
2326      MASCND     BNQ    ITR1                                                             7  08057  J 08719 Q
2327                 BCE    MASCAB,TAD1,1                                                   12  08064  B 07958 01001 1
```

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PGLIN     LABEL      OPCOD  OPERAND                                                    CT  ADDRS  INSTRUCTION

2329      *******************************************************************
2330      *$MANUAL INTERVENTION ROUTINE-CHECK ABILITY OF B REG SET ERROR TO
2331      *$CAUSE MASTER ERROR.NOTE-ACTUALLY B REG RESET ERROR.
2332      MBRSAA     B      NORMAL          TO CLOSED SUBROUTINES                       7  08076  J 01732
2333                 CW     MBRSND&1        SET FOR RESET-RESTART                       6  08083  □ 08221
2334                 SAR    6                                                           7  08089  G 00006 A
2335                 B      TYP1            18.14.06 5C                                 7  08096  J 01120
2336                 CCW    @ 1.GRND 11C2B23P&START@,G                                 22  08124
2337                 B      TYP1                                                        7  08126  J 01120
2338                 CCW    @ 2.B REG SET ALARM.@,G                                    19  08151
2339                 B      TYP1                                                        7  08153  J 01120
2340                 CCW    @   NOT ON ALONE-ERR @                                     20  08179
2341                 DC     MBRSER                                                      5  08184  08214
                             G
2342                 CCW    @M@                                                         1  08185
2343                 B      SPTYPB          ON ALONE-OK,UNGRND,RST,ST                   7  08186  J 08882
2344                 H                      WAIT FOR GROUND                             1  08193  .
2345      *     ********************************************18.14.08
2346      MBRSRP     NCP                 ***CAUSE B REG SET ALARM*   4G-B               1  08194  N
2347           *     BNQ    ITR1                                    *                   7  08195  J 08719 Q
2348           *     BCE    MBRSRP,COMTAD,C  TAD0&1-1,TAD2-NOT1*                       12  08202  B 08194 01119 C
2349      *     ********************************************
2350      MBRSER     H      MBRSRP                                                      6  08214  . 08194
2351      *ERROR HALT-B REG SET ALARM DID NOT CAUSE ALARM STOP.
2352      *THIS ROUTINE CAN BE LOOPED ONLY IF B REG SET ALARM IS
2353      *FAILING.
2354      *SCOPE LOOP POINT-18.14.08 4G-11D2022G
2355      MBRSNC     BNQ    ITR1                                                        7  08220  J 08719 Q
2356                 BCE    MBRSAA,TAD1,1                                              12  08227  B 08076 01001 1
```

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PGLIN     LABEL      OPCOD  OPERAND                                                  CT  ADDRS  INSTRUCTION

2358      ********************************************************************
2359      *$MANUAL INTERVENTION ROUTINE-CHECK THE ABILITY OF THE OP MOD REG
2360      *$SET ALARM TO CAUSE A MASTER ERROR.
2361      MOMSAA     B      NORMAL         GO TO CLOSED SUBROUTINES                  7  08239  J 01732
2362                 CW     MOMSND&1       SET FOR RESET-START                       6  08246  ⌑ 08410
2363                 SAR    6                                                        7  08252  G 00006 A
2364      MOMSAB     B      TYP1           18.14.09 5A                               7  08259  J 01120
2365                 DCW    @ 1.GRND 11D2824C&START@,G                              22  08287
2366                 B      TYP1                                                     7  08289  J 01120
2367                 DCW    @ 2.SHLD STOP ON OP MOD SET ALARM@,G                    32  08327
2368                 B      TYP1                                                     7  08329  J 01120
2369                 DCW    @ 3.IF NOT-ERR @                                        14  08349
2370                 DC     MOMSER                                                   5  08354  08408
                             G
2371                 DCW    @M@                                                      1  08355
2372                 B      TYP1                                                     7  08356  J 01120
2373                 DCW    @ 4.IF OK-UNGRND,RESET,START@,G                         27  08389
2374                 H                         WAIT FOR GROUND                       1  08391  .
2375      *     ************************************************   18.14.08
                                                                                                       G
2376      MOMSRP     BA1    *&1                                   *  4I-G            7  08392  R 08399 M
2377            *    SSF    0            ***CAUSE OP MOD SET ERR *                   2  08399  K 0
2378            *    B      MOMSRP                                *                  7  08401  J 08392
2379      *     ************************************************
2380      MOMSER     H                         DUMMY ERROR HALT                      1  08408  .
2381      *ERROR HALT-MACHINE SHOULD NOW BE STOPPED WITH ONLY
2382      *THE OP MODIFIER SET ALARM ON.THIS ROUTINE MAY BE
2383      *LOOPED IN RESTART OR RESET-RESTART MODES.
2384      *SCOPE LOOP POINT-18.14.08 4I,11D2C21C
                                                                                                       G
2385      MOMSND     BA1    *&1                                                      7  08409  R 08416 M
2386                 BNQ    ITR1                                                     7  08416  J 08719 Q
2387                 BCE    MOMSAB,TAD1,1                                           12  08423  B 08259 01001 1
```

```
PGLIN   LABEL     CPCOD  OPERAND                                             CT  ADDRS  INSTRUCTION

2389    ****************************************************************
2390    *$MANUAL INTERVENTION ROUTINE-CHECK THE ABILITY OF THE 8 CHARACTER
2391    *$SELECT ERROR TO CAUSE A MASTER ERROR.
2392              8      NORMAL         GO TO CLOSED SUBROUTINES              7  08435  J 01732
2393              CW     MBCSND&1                                             6  08442  □ 08603
2394              SAR    6                                                    7  08448  G 00006 A
2395    MBCSAA    8      TYP1           15.30.10 4G                           7  08455  J 01120
2396              DCW    @ 1.GRND 11C3H228&START@,G                          22  08483
2397              8      TYP1                                                 7  08485  J 01120
2398              DCW    @ 2.SHUD STOP ON 8 CHAR SEL ALARM@,G                32  08523
2399              8      TYP1                                                 7  08525  J 01120
2400              DCW    @ 3.IF NOT-ERR @                                    14  08545
2401              DC     M8CSER                                               5  08550  08601
                          G
2402              DCW    @M@                                                  1  08551
2403              B      TYP1                                                 7  08552  J 01120
2404              DCW    @ 4.IF OK-LNGRND,RESET,START@,G                     27  08585
2405              H                     WAIT FOR GROUND                       1  08587  .
2406    *    ********************************************
2407    M8CSRP    SCNLS  1                                 *   18.14.08       6  08588  D 00001
2408    *    ********************************************      4H-P
2409              8      MBCSRP         CAUSE LOOP ON ERROR                   7  08594  J 08588
2410    MBCSER    H                                                           1  08601  .
2411    *ERROR HALT-B CHAR SEL ERROR FAILED TO CAUSE A MASTER
2412    *ERROR.NOW LOOPING ON ERROR.
2413    *SCOPE LOOP POINT-18.14.08 4H,11D2C21D
2414    MBCSNC    BNQ    ITR1                                                 7  08602  J 08719 Q
2415              8CE    M8CSAA,TAD1,1                                       12  08609  B 08455 01001 1
```

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PGLIN     LABEL      OPCOD  OPERAND                                                  CT  ADORS  INSTRUCTION

2417      *******************************************************************
2418      *$MANUAL SECTION ENOED.
2419                 8CE    *&8,TAD3,1                                               12  08621  8 08640 01003 1
2420                 B      ODCFCL        GO TURN 1405 SWITCHES OFF                   7  08633  J 09045
2421                 8CE    MANENO,TADO,1                                            12  08640  8 08668 01000 1
2422                 8      TYP1                                                      7  08652  J 01120
2423                 DCW    @ENC CO22@,G                                              8  08666
2424      MANEND     8CE    RSTCAA,TA03,1 REPEAT ALL 8UT NRML SECT                   12  08668  8 02611 01003 1
                                                                                                              0
2425                 MRCWG  XSTRIC,1      SET TO RESET & RESTART PR                  12  08680  0 09176 00001 L
2426                 CW     START&1                                                   6  08692  ¤ 02001
2427                 SAR    6                                                         7  08698  G 00006 A
2428                 8      ODCFCL        GO TURN 1405 SWITCHES OFF                   7  08705  J 09045
2429                 8      LOAD                                                      7  08712  J 00400
2430      *******************************************************************
2431      *$STANDARC PROGRAM ALTER ROUTINE.
2432      ITR1       S8R    EXIT&5        SET EXIT AODRESS                            7  08719  G 01117 B
2433      ITR2       RCP    ITR3&4        ENTER ADOR TO 8E ALTERED                   10  08726  M %TO 08761 R
                                 T                                                                      T
2434                 8EX1   ITR2,M        GO ANY BUT WLR & NO TRANS                   7  08736  R 08726 M
                                                                                                        S
2435                 8NT1   ITR4          EXIT ON NO TRANSF5R                         7  08743  R 08781 B
                                                                                                        G
2436                 BA1    *&1           RESET I/O INTERLOCK                         7  08750  R 08757 M
2437      ITR3       RCPW   0             ENTER OATA                                 10  08757  L %TO 00000 R
                                 S                                                                      S
2438                 BEX1   ITR3,M        8RANCH ANY 8UT WLR                          7  08767  R 08757 M
                                                                                                        G
2439                 8A1    *&1           RESET I/O INTERLOCK                         7  08774  R 08781 M
2440      ITR4       8      CKTACA        GO INTERROGATE TAOS 0&1&2                   7  08781  J 01017
2441      *******************************************************************
2442      *$SUBROUTINE TO FIND READY 1311 ORIVE.
2443      CHCRIV     SBR    CHCRND&5                                                  7  08788  G 08834 B
2444                 8CE    CHCRND,XIFLA,8  GO IF NO ORIVES READY                    12  08795  B 08829 09271 8
2445                 A      @2@,XIFLA     INCREASE SELECTION                         11  08807  A 09295 09271
2446                 S      &24,CHORND&5                                             11  08818  S 09371 08834
2447      CHCRND     B      0             EXIT                                        7  08829  J 00000
```

```
PGLIN     LABEL      OPCDD  DPERAND                                                        CT  ADDRS  INSTRUCTION

2449      ********************************************************************
2450      *$SPECIAL TYPEDUTS
2451      SPTYPA     S8R    SPTYNO&5                                                        7  08836  G 08880 B
2452                 B      TYP1                                                            7  08843  J 01120
2453                 DCW    @  ON-OK,CCMP RESET,START@,G                                   24  08873
2454      SPTYND     B      0                                                               7  08875  J 00000
2455      SPTYPB     S8R    SPTYXD&5                                                        7  08882  G 08935 B
2456                 B      TYP1                                                            7  08889  J 01120
2457                 CCW    @    ON ALONE-OK,UNGRND,RESET,START@,G                         33  08928
2458      SPTYXD     B      0                                                               7  08930  J 00000
2459      *#
2460      ********************************************************************
2461      *$PREPARE 14C5 IF 14C5 IS PRESENT.
2462      CCDFIL     8CE    OCCFAA,CHN1&27,F                                               12  08937  B 08968 01316 F
2463                 BCE    ODCFAA,CHN2&27,F                                               12  08949  B 08968 01373 F
2464                 B      ODCFEX         GO-NO 1405 PRESENT                               7  08961  J 09038
2465      CCDFAA     8W     OCCFEX,XOCCFI  GO-SWITCHES ALREADY ON                          12  08968  V 09038 09238 1
2466                 B      TYP1                                                            7  08980  J 01120
2467                 DCW    @ 14C5 C.E.TST & 1405 CMP OISABLE TO ON@,G                     38  09024
2468                 CW     CKSWIT         SET TO HALT FOR SW.CHANGE                        6  09026  ¤ 01577
2469                 SW     XDCCFI         SET SW.DN INOICATOR                              6  09032  , 09238
2470      CDCFEX     B      CKNOPW&7                                                        7  09038  J 01576
2471      CDCFCL     SBR    DDCFND&5                                                        7  09045  G 09128 B
2472                 BW     *&8,XDDDFI                                                     12  09052  V 09071 09238 1
2473                 B      DDCFND          GD- SWITCHES NOT ON                             7  09064  J 09123
2474                 CW     OCCFAB&1                                                        6  09071  ¤ 09118
2475                 SAR    6                                                               7  09077  G 00006 A
2476                 B      TYP1                                                            7  09084  J 01120
2477                 CCW    @ 14C5 SWITCHES TD NORMAL@,G                                   24  09114
2478                 H                     WAIT FOR SWITCH CHANGES                          1  09116  .
2479      CCDFAB     CW     XDCCFI         CLEAR SWITCH DN INDICATDR                        6  09117  ¤ 09238
2480      CDDFND     B      0                                                               7  09123  J 00000
```

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PGLIN     LABEL      OPCOD  OPERAND                                                    CT  ADDRS  INSTRUCTION

2482      ********************************************************************
2483      *$CONSTANTS AND STORAGE
2484      XAAR       DCW    @99999@       AAR CONTENTS ON RST-RSTRT                     5  09134
2485      XBAR       DCW    @99999@       BAR CONTENTS ON RST-RSTRT                     5  09139
2486      XSTRTA     SAR    XAAR    00001 RESET-RESTART ROUTINE A                       7  09140  G 09134 A
2487                 SBR    XBAR    00008                                               7  09147  G 09139 B
2488                 B      0       00015                                               7  09154  J 00000
                             G
2489                 DCW    @M@     00022                                               1  09161
2490      XSTRTB     CW     XINDIC  00001 RESET-RESTART ROUTINE B                       6  09162  ⌑ 09216
2491                 B      0       00007                                               7  09168  J 00000
                             G
2492                 DCW    @M@     00014                                               1  09175
2493      XSTRTC     B      0       00001 RESET-RESTART ROUTINE C                       7  09176  J 00000
                             G
2494                 DCW    @M@     00008                                               1  09183
2495      XROUTN     S      &7,SETGO&5  00030  RSTRT LAST ROUTINE                      11  09184  S 09372 01467
2496                 B      RESTRT      00041                                           7  09195  J 01455
                             G
2497                 DCW    @M@         00048                                           1  09202
2498      XMODE      DCW    @ @           N-NRML,R-RSTRSTRT,E-RSTRT                     1  09203
2499      XSPACE     DCW    @ @,G                                                       1  09204
2500      XATES      DCW    @8888888888@                                               10  09215
```

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PGLIN      LABEL      OPCOD  OPERAND                                                     CT  ADDRS  INSTRUCTION

2502       XINCIC     DCW    @ @             RST-RSTRT MAY CLEAR WM                       1  09216
25C3       XECITA     CCW    @  @@@          EDIT A FIELD DATA                            4  09220
25C4        XMASA     DCW    @ LNGRND@,G     SPECIAL MESSAGE                              7  09221
25C5       XOPRSA     CCW    XATES-10                                                     5  09233  09205
25C6       XTBLA      DCW    @ @                                                          1  09234
25C7       XTBLB      CCW    @ @                                                          1  09235
2508       XFILEA     DCW    @ @             WM IF E CHNL 1405 NOT RDY                    1  09236
25C9       XFILFA     DCW    @ @             WM IF F CHNL 1405 NOT RDY                    1  09237
2510       XOCCFI     DC     @ @             WM IF 1405 SWITCHES ON                       1  09238
2511       XRBCEA     CCW    WRTBOT                                                       5  09243  09691
2512       XRBCFA     CCW    WRTBOT                                                       5  09248  09691
2513        XFILE     DCW    @0C00000T@,G  1405 E CHANNEL SELECTION                       8  09249
2514                  CCW    @ @,G                                                        1  09258
2515        XFILF     CCW    @CCCC0C0T@,G  1405 F CHANNEL SELECTION                       8  09260
2516                  DCW    @ @,G                                                        1  09269
2517        XIFLA     CCW    @0C000CC001@,G                                              10  09271
2518       XIFLCK     DC     @ @,G                                                        1  09282
2519        XNRML     B      NRMLAA                                                       7  09284  J 02561
                              G
2520                  DCW    @M@                                                          1  09291
2521                  PST
```

```
PGLIN     LABEL       OPCOD  OPERAND                                                        CT  ADDRS  INSTRUCTION

 2523     ***********************************************************************
 2524     *$LITER.'. CONSTANTS.
 2525                 LTORG  *                                                                  09292
 2525                        @A@                                                             1  09292
 2525                        @ @                                                             1  09293
 2525                        @1@                                                             1  09294
 2525                        @2@                                                             1  09295
 2525                        &2400                                                           4  09299
 2525                        @2222@                                                          4  09303
 2525                        &1                                                              1  09304
 2525                        @R@                                                             1  09305
 2525                        @N@                                                             1  09306
 2525                        @$.50@                                                          4  09310
 2525                        @00000@                                                         5  09315
                              G
 2525                        @M@                                                             1  09316
 2525                        @E@                                                             1  09317
 2525                        @88888@                                                         5  09322
 2525                        @00005@                                                         5  09327
 2525                        @9999@                                                          4  09331
 2525                        @0000@                                                          4  09335
 2525                        XTBLB                                                           5  09340  09235
 2525                        @0@                                                             1  09341
 2525                        IFLEZX                                                          5  09346  05183
 2525                        IFLFZX                                                          5  09351  05456
 2525                        @00109@                                                         5  09356
 2525                        RBCERB                                                          5  09361  05849
 2525                        RBCFRB                                                          5  09366  06131
 2525                        @X@                                                             1  09367
 2525                        @□@                                                             1  09368
 2525                        @X@                                                             1  09369
 2525                        &24                                                             2  09371
 2525                        &7                                                              1  09372
```

```
PGLIN     LABEL       OPCOD  OPERAND                                               CT  ADDRS  INSTRUCTION

2527      PATCHA D    CW     ADRCST&1           SET FOR RESET RESTART              6  09373  ¤ 03794
2528             D    SAR    20                                                    7  09379  G 00020 A
2529             D    BCE    ADRCND&19,SYS1&1,9  BYPASS RT IF 100K SYSTEM         12  09386  B 03857 01257 9
2530             D    B      ADRCRP             GO TO ROUTINE                      7  09398  J 03757
2531             D    H                                                            1  09405  .
2532                  END    START              D.E.B.                                       J02000
                                                         END OF ASSEMBLY
```